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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization.  The examination of documents and the visual inspection of the Court Street Dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam		

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has some deficiencies which require remedial action.

Under the conditions of flow exceeding approximately 25 percent of the PMF the capacity of the river channel itself will be exceeded. Therefore, the spillway is judged inadequate but with the understanding that this is not critical in view of the fact that the river channel will not pass the one-half PMF event without overtopping either. Hence, the hazard downstream is not significantly increased.

No stability analyses (either overturning or sliding) were deemed appropriate for the Court Street Dam since it is embedded into the underlying bedrock and the gates are below the channel bottom when open. Therefore, there are no sliding or overturning forces acting.

The dam has a number of problem areas which, if left uncorrected, have the potential for the development of hazardous conditions and must be corrected within one year. These areas are:

1. Correct concrete deterioration throughout the dam and along the east and west appurtenant structures.
2. Arrest or reduce leakage around the gate.
3. Develop and implement a detailed emergency operation-action plan and warning system.

# GENESEE RIVER BASIN

## COURT STREET DAM

MONROE COUNTY, NEW YORK

INVENTORY NO. N.Y. 683

### PHASE I INSPECTION REPORT NATIONAL DAM SAFETY PROGRAM



Prepared by  
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Prepared for  
DEPARTMENT OF THE ARMY  
NEW YORK DISTRICT, CORPS OF ENGINEERS  
NEW YORK, NEW YORK

SEPTEMBER 1980

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## PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation, however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the Spillway Test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative spillway capacity and serves as an aide in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

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⑩ Bent L. / Thompson  
Gary L. Wood

PHASE I INSPECTION REPORT

⑥ NATIONAL DAM SAFETY PROGRAM

COURT STREET DAM

~~E-D NO. N.Y. 683~~

(Inventory Number  
NY 683)

MONROE COUNTY, NEW YORK

Phase I Inspection Report

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PHASE I INSPECTION REPORT  
NATIONAL DAM SAFETY PROGRAM

NAME OF DAM: Court Street Dam  
I. D. No. NY-683

STATE LOCATED: New York

COUNTY LOCATED: Monroe

WATERSHED: Genesee River

STREAM: Genesee River

DATES OF INSPECTION: June 12, June 27, July 15, 1980

ASSESSMENT

The examination of documents and the visual inspection of the Court Street Dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies which require remedial action.

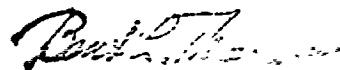
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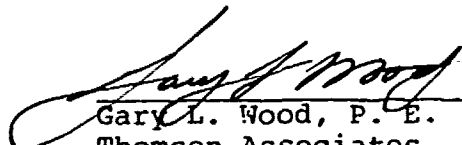
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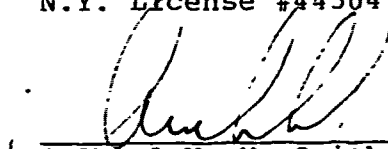
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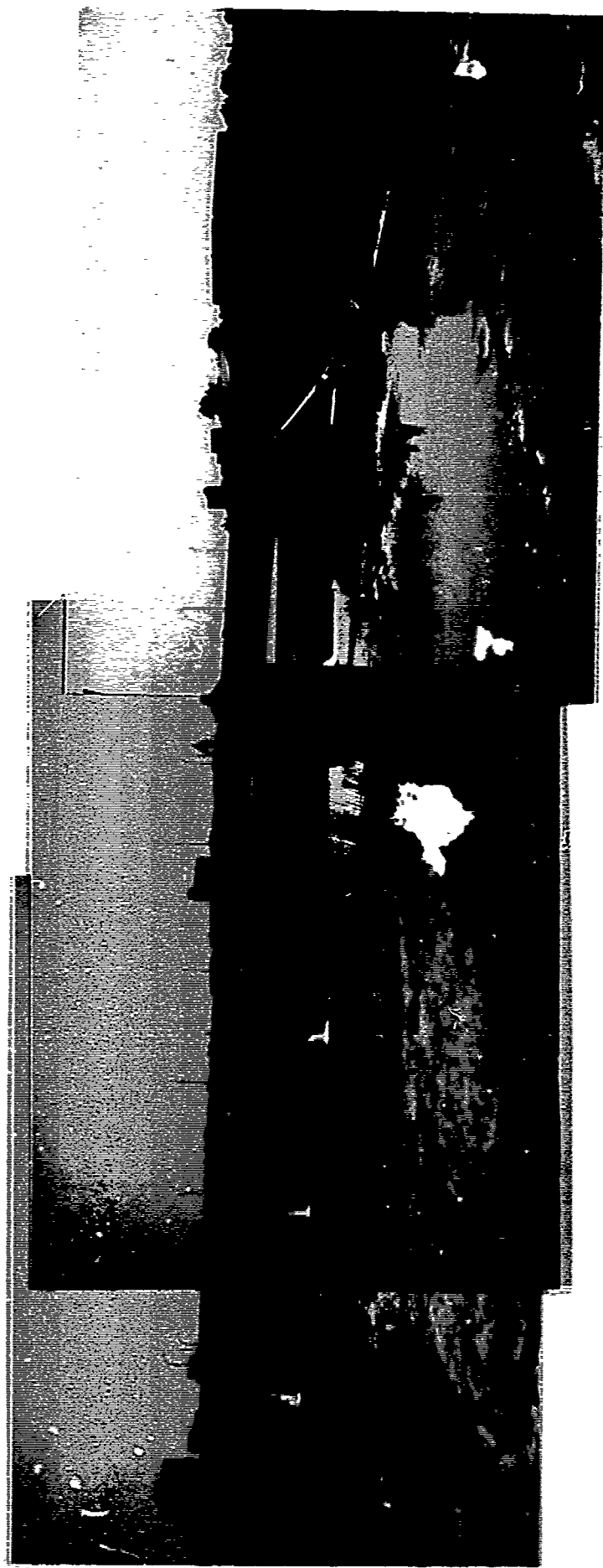
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APPROVED BY



9/30/80

Colonel W. M. Smith, Jr.  
New York District Engineer



Panoramic View of  
COURT STREET DAM

PHASE I INSPECTION REPORT  
NATIONAL DAM SAFETY PROGRAM  
COURT STREET DAM  
I.D. NO. N.Y. - 683

MONROE COUNTY, NEW YORK

SECTION 1: PROJECT INFORMATION

1.1 GENERAL

a. Authority

The Phase I inspection reported herein was authorized by the Department of the Army, New York District, Corps of Engineers, to fulfill the requirements of the National Dam Inspection Act, Public Law 92-367.

b. Purpose of Inspection

This inspection was conducted to evaluate the existing conditions of the dam, to identify deficiencies and hazardous conditions, to determine if they constitute hazards to human life and property, and to recommend remedial measures where necessary.

1.2 DESCRIPTION OF PROJECT

a. Description of the Dam and Appurtenant Structures

The Court Street Dam consists primarily of 4 steel radial overflow gates, each with a maximum crest elevation of 513.1 (BCD-Barge Canal Datum). Proceeding from east to west, the gates have the following approximate widths:

Gate #1 - 53 feet

Gate #2 - 53 feet

Gate #3 - 110 feet

Gate #4 - 110 feet

Concrete piers separate the gates. There is an operating house on the pier between gates 1 and 2, and another operating house on the pier between gates 3 and 4.

The gates are supported and their levels are controlled by water pressure. A system of valves and chambers in the piers beneath the operating houses controls the water transmitted beneath the gates. For cleaning and inspection, the gates are supported in their full upright position by props.

Near the east end and upstream of the dam, there is a concrete wall equipped with 4 vertical gates. These gates are used by Rochester Gas and Electric to control a relatively small amount of flow in a channel running parallel and along the east bank of the Genesee River. This water, after being used for cooling of the city library, is returned to the Genesee River.

At the west end of the dam, Rochester Gas and Electric maintains a hydroelectric powerhouse. The intakes for this powerhouse are located just upstream of the dam. Water leaving the powerhouse flows in a channel parallel to the Genesee River, and rejoins the river north (downstream) of Court Street.

#### b. Location

The dam is located on the Genesee River, just south of the Court Street Bridge in the City of Rochester, New York.

#### c. Size Classification

The Court Street Dam has a head of approximately 19 feet.

Although the storage of the dam could not be computed, it was estimated to be approximately 3,000 acre-feet (based on a length of 3 1/2 miles, an average width of 470 feet, and an average depth of 15 feet). Therefore, the dam is classified as intermediate size.

#### d. Hazard Classification

The dam is classified "high" hazard because of downstream structures and the potential impact on navigation on the pool behind the dam and the Barge Canal which it feeds.



e. Ownership

The Court Street Dam is owned by the New York State Department of Transportation, Waterways Maintenance Subdivision. The controlling office is located near Rochester, New York.

New York State Department of Transportation  
Region 4  
Canals and Waterways  
Jefferson Road  
Rochester, New York  
Mr. Clarence Burkweit  
716-442-8550

f. Purpose of the Dam

The primary purpose of the dam is to provide a navigation pool in the Genesee River and provide water supply to the Barge Canal. Secondary purposes are to provide hydroelectric power and to provide cooling water for the city library.

g. Design and Construction History

The present dam was constructed in about the year 1926.

h. Normal Operational Procedures

The water level behind the dam is maintained as nearly as possible to elevation 513.1 (BCD). Upstream gauge readings are recorded hourly.

1.3

PERTINENT DATA

a. Drainage Area (square miles) 2460+

b. Elevations (Barge Canal Datum)

Maximum Height of the Gates	513.1
Top of Dam (also upstream channel walls)	518
Design Pool	513.1
Maximum Recorded Pool	516+
Streambed at Dam Centerline	494.5+

c. Dam

Type	Radial Sector Gates
Length	375'
Height of Maximum Pool	19'+
Foundation	Seated in Rock

## SECTION 2: ENGINEERING DATA

### 2.1 GEOTECHNICAL DATA

#### a. Geology

The Court Street Dam is situated on the Genesee River in the heart of Rochester, New York, in the Erie-Ontario Lowlands physiographic province.

Bedrock at this location consists of limestones and dolostones, with interbedded shales, of the Silurian Lockport and underlying Clinton Groups. For the purposes of a small study area these strata may be considered flatly-lying, non faulted and seismically stable.

Pleistocene glacial deposits consist of three main types. Glacial till deposited as ground moraine during advance of the Wisconsin ice mantles bedrock and underlies most of the area. Upon retreat of the Ontarian ice lobe from this region and submersion of much of the area beneath proglacial Lake Iroquois, those areas so covered became the lake floor and reflect this in their present level to gently rolling topography and fine-grained, lake-laid substrata. Lastly, drainage channels have been filled with granular outwash and alluvium associated with final glacial downwasting.

#### b. Subsurface Investigation

No records of subsurface investigation were available. Based upon the available plans and the site characteristics, it appears that the structure is founded on rock.

### 2.2 DESIGN/CONSTRUCTION RECORDS

Plans dated 1925 and 1926, and identified as "Rochester Gas and Electric, Proposed Location for Sector Type Control Gates at Court Street, Barge Canal Harbor" show the existing dam as it presently exists. Selected drawings are included in Appendix D.

2.3 OPERATION RECORDS

This site has an attendant on a continuous basis. Upstream water elevation readings are recorded hourly throughout the year. This level is maintained as nearly as possible to elevation 513.1 (BCD).

2.4 EVALUATION OF DATA

The data presented in this report was obtained during the site inspections and from the files of the New York State Department of Transportation. The information is considered adequate for Phase I inspection purposes.

### SECTION 3: VISUAL INSPECTION

#### 3.1 FINDINGS

##### a. General

Visual inspections of the dam and appurtenant structures were conducted on June 12, 1980, June 27, 1980, and July 15, 1980. The weather was generally fair. The upstream water elevation was approximately 513.1 (BCD) during all three inspections.

##### b. Dam

During the first inspection, the gates were in a normal operating condition with flow over the top and the chamber below flooded. The general condition of the concrete piers and operating houses between the gates, plus the abutments, were noted to be somewhat deteriorated. There was also some leakage noted around the gates which is the result of poorly maintained seals. These deficiencies are documented in the photographs attached as Appendix A.

The subsequent inspections were made at dates when the gates were propped in the open position for routine cleaning and maintenance (gates 1 and 2 were inspected on June 27, and the remaining gates were inspected on July 15). At this time it was possible to enter the gate recess chamber and observe the condition of the gate structures. They were found to be clean but poorly painted. There is however, little significant deterioration. It is reported that this cleaning is a routine annual operation.

These gates are operated by flooding or draining the chambers under the gates. While the system was not seen in operation, the fact that the gates were operated between visits attests to their satisfactory operating condition

c. East and West Appurtenant Structures

Concrete deterioration was noted along the east (wall, vertical gates, and channel) and west (powerhouse, intakes, and exit channel) appurtenant structures.

d. Upstream and downstream channels

The conditions of the upstream and downstream river channels appeared to be satisfactory.

3.2

EVALUATION OF OBSERVATIONS

The following deficiencies were noted:

- 1) Concrete deterioration throughout the dam
- 2) Leakage around the gates
- 3) Concrete deterioration along the east and west appurtenant structures.

#### SECTION 4: OPERATION AND MAINTENANCE PROCEDURES

##### 4.1 PROCEDURE

Normal practice is to maintain the upstream water elevation as nearly as possible to elevation 513.1 (BCD). This is accomplished by manual operation and the dam is attended on an around-the-clock basis for this purpose. Records of the actual water stages are maintained by the New York State Department of Transportation.

The operation of the auxiliary gates along both sides of the upstream channel is controlled by Rochester Gas and Electric Corporation as previously noted, and their plan of operation (if any) was not considered significant to this investigation.

##### 4.2 MAINTENANCE OF DAM

The dam is maintained by the New York State Department of Transportation. All of the gates are secured in the fully extended condition each year and the underlying recess chambers as well as the gate structures are cleaned and inspected. However, increased maintenance is required to correct concrete deterioration, and to arrest or reduce leakage around the gates.

##### 4.3 MAINTENANCE OF EAST AND WEST APPURTENANT STRUCTURES

The east (wall, vertical gates, and channel) and west (powerhouse, intakes, and exit channel) appurtenant structures are maintained by Rochester Gas and Electric. Increased maintenance is required to correct concrete deterioration.

##### 4.4 WARNING SYSTEM IN EFFECT

No apparent warning system is present.

#### 4.5 EVALUATION

Additional maintenance is required to correct concrete deterioration of the concrete portions of the dam, and along the east and west appurtenant structures. In addition, leakage around the gates should be arrested or reduced, and a detailed emergency warning system should be developed.

## SECTION 5: HYDROLOGIC/HYDRAULIC

### 5.1 DRAINAGE AREA CHARACTERISTICS

The major portion of the Genesee River basin is located in the western part of New York and it has a total drainage area of 2479 square miles. The drainage area above the Court Street Dam is approximately 2460 square miles, of which about 1075 square miles lies upstream of the Mount Morris Dam which was built and is operated for flood control by the Army Corps of Engineers. The Genesee River has a total length of about 157 river miles. It rises in the Allegheny Mountains in Potter County, Pennsylvania at an elevation of about 2400 feet, flows generally northwest to Houghton, and then generally northeast to its mouth on Lake Ontario, at an elevation of approximately 247 feet. The topography of the basin upstream of the Mount Morris Dam is steep and rugged, as compared to gently rolling terrain downstream of this dam. In Letchworth State Park, just upstream of Mount Morris Dam, the river elevation drops from 1080 feet to 768 feet, over three successive falls, flowing through a deep gorge cut in rock. The river flows through flat alluvial plains from the Village of Mount Morris to Rochester. The large tributaries to the Genesee River which enter below the Mount Morris dam are Canaseraga Creek, Honeoye Creek, Oatka Creek, Black Creek, and Conesus Creek.

### 5.2 ANALYSIS CRITERIA

The hydrologic analysis of this dam was performed using the Corps of Engineers HEC-1 computer program, Dam Safety Version. The spillway design flood selected for analysis was the Probable Maximum Flood (PMF) in accordance with the Recommended Guidelines of the U.S. Army Corps of Engineers.



The hydrologic analysis was performed using the unit hydrograph in the Genesee River and its major tributaries. The flood hydrographs were then routed downstream by the Modified Puls method and the Muskingum method.

The hydrologic model for the Genesee River was obtained from the U.S. Army Corps of Engineers, Buffalo District. The model, consisting of 6 hour unit hydrographs in the Genesee River at the Mount Morris Dam and its major tributaries in the lower basin, and the Muskingum routing coefficients from the outlet of the dam to the Rochester gauge in the Genesee River; was developed by the Corps of Engineers. This model was adopted for the hydrologic analysis of the Court Street Dam with minor adjustments. Unit hydrographs and routing coefficients were developed using the data from actual storms. Synthetic unit hydrographs were developed in the streams where there was lack of actual data.

The Probable Maximum Flood (PMF) was developed from the Probable Maximum Precipitation (PMP). Hydrometeorological Report No. 33 was used to obtain PMP values. The PMF hydrograph at Court Street dam was developed for the following 2 cases:

1. The Mount Morris Reservoir level at the spillway crest (elevation 760), and the Probable maximum precipitation applied to each subarea used in the analysis.
2. The Mount Morris Reservoir level at the conservation pool level (elevation 593), and the probable maximum precipitation applied to the center of the total drainage area.

Both analyses were made assuming the nine conduits in the outlet works as inoperative. The resulting peak inflows were:

<u>Case</u>	<u>1/2 PMF (cfs)</u>	<u>PMF (cfs)</u>
1	231,110	472,967
2	101,087	208,074

### 5.3 SPILLWAY CAPACITY

The dam has four sector gates and is a run-of-river structure. The gates are kept raised during the navigation season to maintain the elevation of the New York State Barge Canal (approximately 513.1 feet). The spillway is divided into four spans with a gate in each span. Two spans have lengths of 110 feet each and the other two have lengths of 54 feet each. A discharge coefficient of 3.1 was used to compute the discharge capacity of the spillway, with the gates assumed to be in the lowered position (i.e. maximum flow configuration). Under these conditions, the calculated capacity of the gates is 51,100 cfs with a stage at elevation 516 which is equivalent to the top of the channel sidewalls. Beyond this depth, the concept of weir flow is not applicable.

### 5.4 RESERVOIR CAPACITY

The reservoir storage above the top of the dam is not applicable. The reservoir elevation is regulated by raising and lowering the gates. The effective storage is the storage in the channel of the Genesee River which extends several miles above the dam with a channel width of 250 feet to 450 feet.

### 5.5 FLOODS OF RECORD

The maximum discharge recorded at the U.S.G.S. gauging station at Rochester, approximately 2.5 miles upstream of the dam, was 48,300 cfs in March of 1916. The elevation of the flood water was 519.15. Since the construction of the Mount Morris Dam in 1952, the flows have been regulated to prevent flooding in the lower basin. A discharge of 29,600 cfs was recorded at the gauge in June 1972 while the peak inflow to the Mount Morris reservoir was estimated at 91,350 cfs.

#### 5.6 OVERTOPPING POTENTIAL

The hydrologic analyses were based upon the condition of having all gates completely lowered. In such a situation, the concept of overtopping the dam, per se, becomes meaningless. However, it is noteworthy that the top of channel walls would be overtopped by all flows in excess of approximately 25 percent of the PMF. The depth of this overtopping could not be calculated because of the inapplicability of the calculation procedure as described in Section 5.3.

#### 5.7 EVALUATION

Under the conditions of flow exceeding approximately 25 percent of the PMF the capacity of the river channel itself will be exceeded. Therefore, the spillway is judged inadequate but with the understanding that this is not critical in view of the fact that the river channel will not pass the one-half PMF event either without overtopping. Hence, the hazard downstream would not be significantly increased by overtopping of the dam.

## SECTION 6: STRUCTURAL STABILITY

### 6.1 EVALUATION OF STRUCTURAL STABILITY

#### a. Visual Observations

No visible evidence of structural instability was noted. The horizontal and vertical alignments, abutments, water passages, and joints in the concrete work all appeared to be satisfactory. The concrete deterioration and leakage noted in the visual inspection has not yet affected the structural stability.

#### b. Stability Evaluation

No stability analyses (either overturning or sliding) were deemed appropriate for the Court Street Dam since the gate chambers are embedded into the underlying bedrock. Therefore, there are no sliding or overturning forces acting on the structure when the gates are open (except for the narrow piers located between gates).

## SECTION 7: ASSESSMENT/RECOMMENDATIONS

### 7.1 ASSESSMENT

#### a. Safety

The Phase I inspection of the Court Street Dam did not reveal conditions which constitute an immediate hazard to human life or property. However, increased maintenance is required to correct concrete deterioration and to arrest or reduce leakage around the gates.

Since the spillway does not have sufficient discharge capacity for passing one-half the PMF, it is considered to be inadequate. However, this is not considered to be a serious deficiency since the river channel will also be exceeded and there is no increased hazard downstream caused by spillway limitations.

During periods of unusually heavy precipitation and high runoff occurring over the watershed, continuous surveillance should be provided both at the dam and in the downstream areas to warn of high floodwater conditions. Such surveillance procedures, and such other measures as may be deemed necessary should be developed, documented and placed in readiness for future use as part of a detailed emergency operation-action plan. A warning system should also be developed and implemented.

#### b. Adequacy of Information

The information available for preparation of the report is considered adequate for a Phase I investigation.

#### c. Necessity for Additional Investigations

No additional investigations are deemed necessary at this time.

d. Urgency

The deficiencies noted in this investigation should be corrected within twelve (12) months of the date of notification of the owner.

7.2

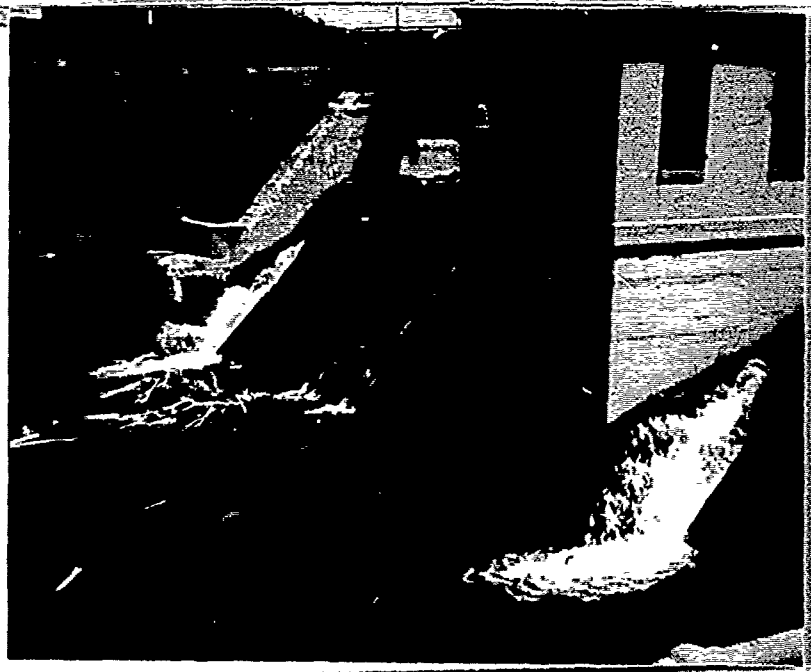
RECOMMENDED MEASURES

The following actions should be undertaken:

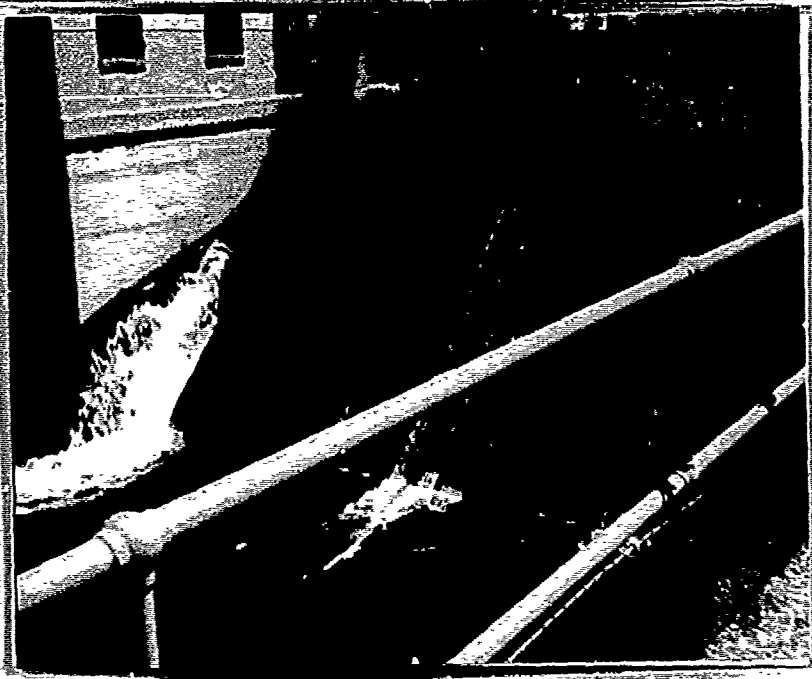
- a) Correct concrete deterioration throughout the dam and along the east and west appurtenant structures.
- b) Arrest or reduce leakage around the gates.
- c) Develop and implement a detailed emergency operation-action plan and warning system.

APPENDIX A

PHOTOGRAPHS



Gate #1;  
NOTE: Concrete deterioration  
and leakage



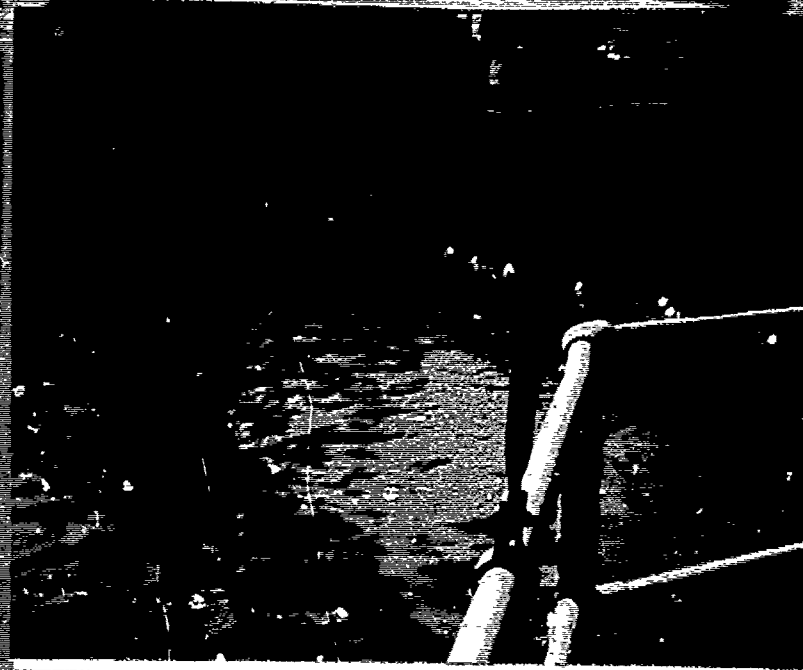
Gate #2;  
NOTE: Leakage



Gate #3;  
NOTE: Leakage



Upstream of Gate #2;  
NOTE: Concrete deterioration

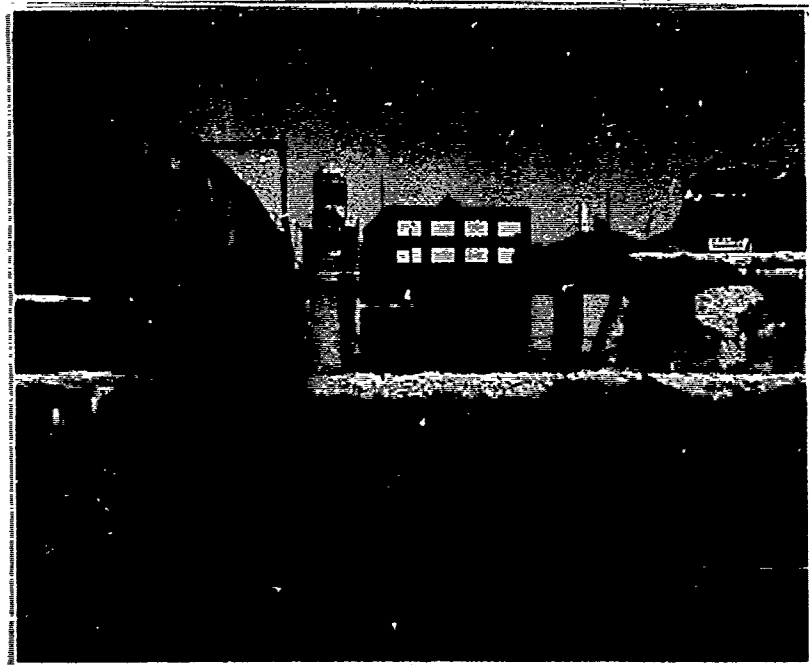


Upstream of Gate #1;  
NOTE: Concrete deterioration

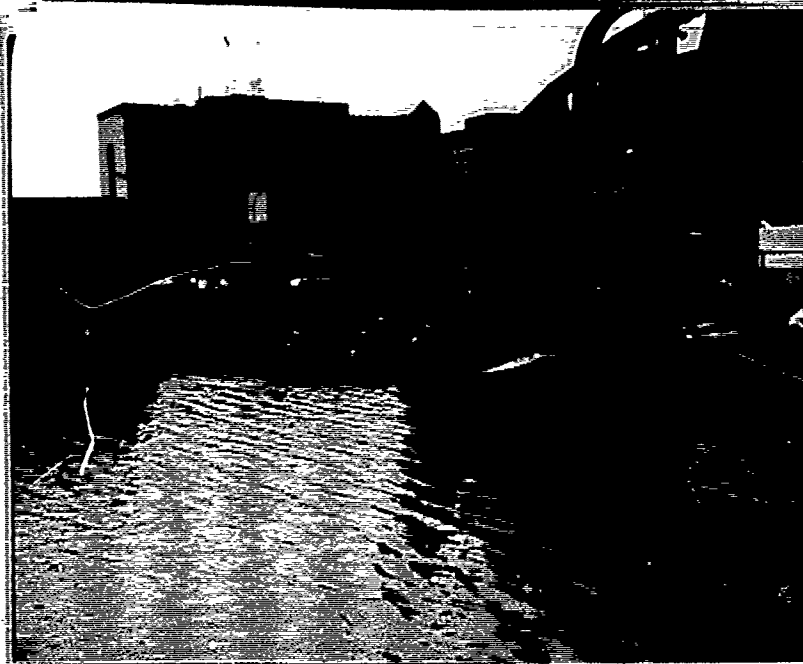


Gate #4;  
NOTE: Leakage





Upstream of Gate #3;  
NOTE: Concrete deterioration



Upstream of Gate #4

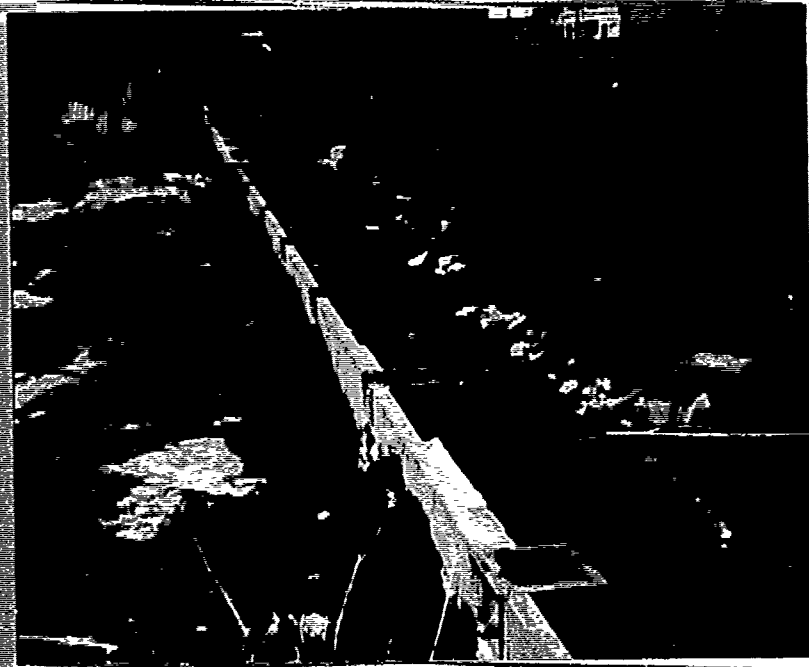


Gates east and upstream of  
Dam

Powerhouse intakes, west and  
upstream of Dam

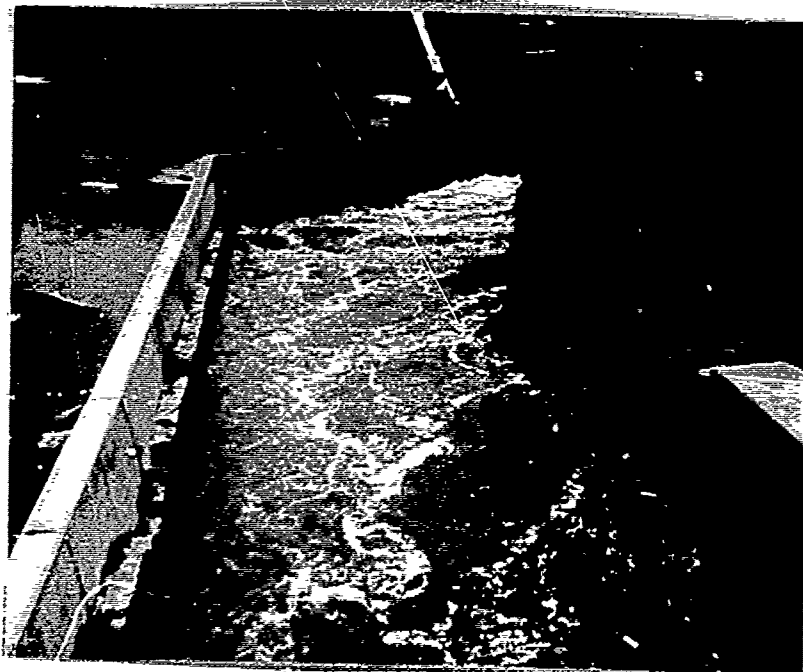


Channel east of Dam, facing  
downstream

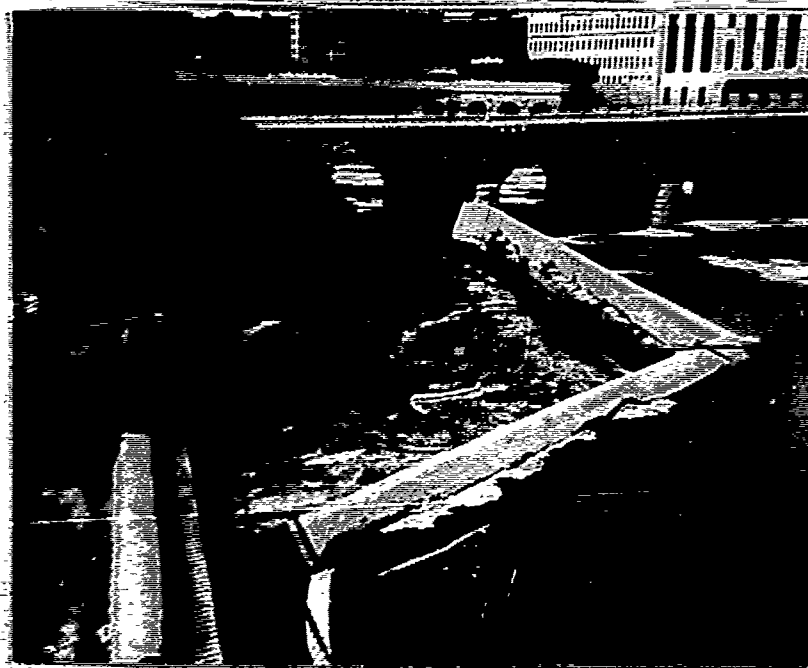


Channel east of Dam, facing  
upstream

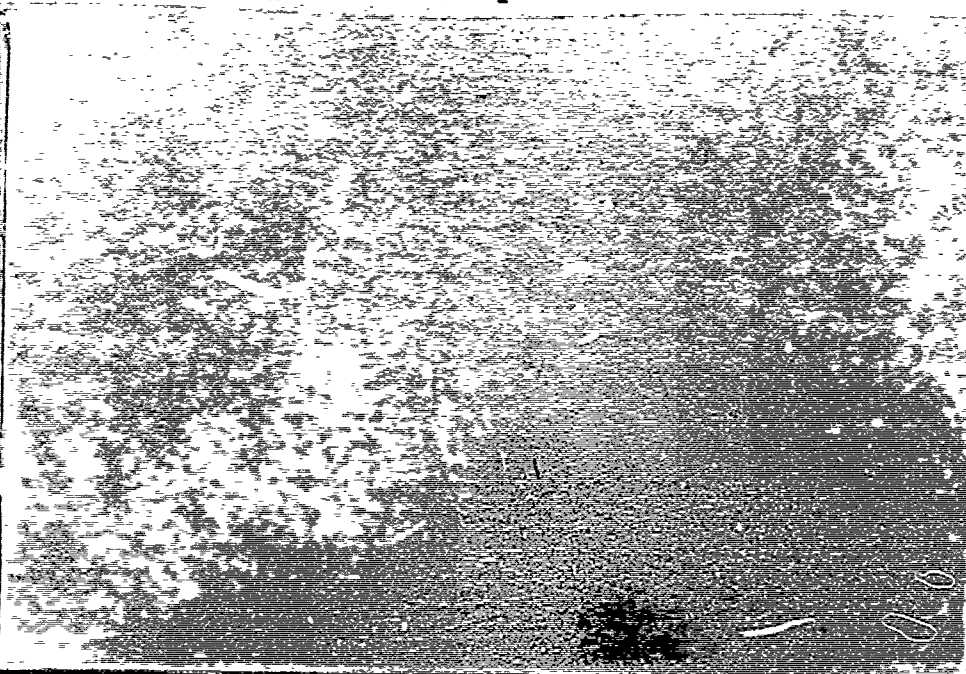




Powerhouse exit channel,  
facing upstream



Powerhouse exit channel,  
facing downstream



APPENDIX B

VISUAL INSPECTION CHECKLIST

THOMSEN ASSOCIATES  
CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

VISUAL INSPECTION CHECKLIST

1) Basic Data

a. General

Name of Dam COURT STREET DAM  
I.D. # 40B-73 DEC. Dam No. 683  
River Basin GENESEE RIVER  
Location: Town ROCHESTER County MONROE  
U.S.G.S. Quadrangle ROCHESTER EAST  
Stream Name GENESEE RIVER  
Tributary of LAKE ONTARIO  
Latitude (N) 43° 9' Longitude (W) 170° 36' 30"  
Type of Dam 4 GATES  
Hazard Category HIGH 7/15/80 (GATES 301)  
Date(s) of Inspection 6/12/80, 6/27/80 (GATES 1 & 2)  
Weather Conditions SUNNY  
Reservoir Level at Time of Inspection 513.1  
Tailwater Level at Time of Inspection BELOW ROCK (≈ 494.5)

b. Inspection Personnel RAY TRETER (TA)  
PICK WOLOT (MAJ)

c. Persons Contacted (Including Address & Phone No.)  
CLARENCE BUCKHIT, NYS DOT (716-442-8550)  
DICK BARLEY, NYS DOT (716-442-8550)  
AAAT DAM 325-4882

d. History:  
Date Constructed 1926 Date(s) Reconstructed \_\_\_\_\_  
Designer RLOE  
Constructed by RLOE  
Owner PRESENTLY NYS DOT

e. Seismic Zone 3

THOMSEN ASSOCIATES  
CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

VISUAL INSPECTION CHECKLIST

2) Embankment

a. Characteristics

- 1) Embankment Material CONCRETE & METAL DAM
- 2) Cutoff Type NONE
- 3) Impervious Core N.A.
- 4) Internal Drainage System NONE
- 5) Miscellaneous \_\_\_\_\_

b. Crest

- 1) Vertical Alignment GOOD
- 2) Horizontal Alignment GOOD
- 3) Surface Cracks NONE NOTED
- 4) Miscellaneous \_\_\_\_\_

c. Upstream Slope

- 1) Slope (Estimate) (V:H) N.A.
- 2) Undesirable Growth or Debris, Animal Burrows N.A.
- 3) Sloughing, Subsidence or Depressions N.A.

# THOMSEN ASSOCIATES

CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

## VISUAL INSPECTION CHECKLIST

4) Slope Protection N.A.

5) Surface Cracks or Movement at Toe N.A.

### d. Downstream Slope

1) Slope (Estimate - V:H) N.A.

2) Undesirable Growth or Debris, Animal Burrows N.A.

3) Sloughing, Subsidence or Depressions N.A.

4) Surface Cracks or Movement at Toe N.A.

5) Seepage UNOBSERVABLE

6) External Drainage System (Ditches, Trenches; Blanket)

N.A.

7) Condition Around Outlet Structure N.A.

8) Seepage Beyond Toe N.A.

### e. Abutments-Embankment Contact



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VISUAL INSPECTION CHECKLIST

- 1) Erosion at Contact NONE NOTED  
\_\_\_\_\_  
\_\_\_\_\_
- 2) Seepage Along Contract NONE NOTED  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 3) Drainage System
  - a. Description of System N.A.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. Condition of System N.A.  
\_\_\_\_\_  
\_\_\_\_\_
  - c. Discharge from Drainage System N.A.  
\_\_\_\_\_  
\_\_\_\_\_
- 4) Instrumentation (Monumentation/Surveys, Observation Wells, Weirs, Piezometers, Etc.)  
WATER LEVEL AND GATE LEVEL  
GAUGES IN OPERATING HOUSE.  
\_\_\_\_\_  
WATER LEVEL GAUGES ARE OPERATED  
BY FLOATS.  
\_\_\_\_\_  
GAUGES READ HOURLY.  
\_\_\_\_\_  
\_\_\_\_\_

THOMSEN ASSOCIATES  
CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

VISUAL INSPECTION CHECKLIST

5) Reservoir

- a. Slopes GENERALLY GOOD
- b. Sedimentation UNOBSERVABLE
- c. Unusual Conditions Which Affect Dam LAKE TREES  
PERIODICALLY REMOVED

6) Area Downstream of Dam

- a. Downstream Hazard (No. of Homes, Highways, etc.) URBAN AREA
- b. Seepage, Unusual Growth NONE NOTED
- c. Evidence of Movement Beyond Toe of Dam NONE
- d. Condition of Downstream Channel GOOD

7) Spillway(s) (Including Discharge Conveyance Channel)

- a. General SPILLWAY IS SPILLING OVER  
GATES
- b. Condition of Service Spillway APPEARS GOOD

THOMSEN ASSOCIATES  
CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

VISUAL INSPECTION CHECKLIST

c. Condition of Auxiliary Spillway N.A.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d. Condition of Discharge Conveyance Channel Good

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8) Reservoir Drain/Outlet N.A.

Type: Pipe \_\_\_\_\_ Conduit \_\_\_\_\_ Other \_\_\_\_\_

Material: Concrete \_\_\_\_\_ Metal \_\_\_\_\_ Other \_\_\_\_\_

Size: \_\_\_\_\_ Length \_\_\_\_\_

Invert Elevations: Entrance \_\_\_\_\_ Exit \_\_\_\_\_

Physical Condition (Describe): \_\_\_\_\_ Unobservable \_\_\_\_\_

Material: \_\_\_\_\_

Joints: \_\_\_\_\_ Alignment \_\_\_\_\_

Structural Integrity: \_\_\_\_\_

Hydraulic Capability: \_\_\_\_\_

Means of Control: Gate \_\_\_\_\_ Valve \_\_\_\_\_ Uncontrolled \_\_\_\_\_

Operation: Operable \_\_\_\_\_ Inoperable \_\_\_\_\_ Other \_\_\_\_\_

Present Condition (Describe): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# THOMSEN ASSOCIATES

CONSULTING ENGINEERS

## 9) Structural

a. Concrete Surfaces

SOME DETEGRATION

b. Structural Cracking

NONE NOTED

c. Movement - Horizontal & Vertical Alignment (Settlement)

NONE NOTED

d. Junctions with Abutments or Embankments

ALL ARE GOOD

e. Drains - Foundation, Joint, Face

N.A.

f. Water Passages, Conduits, Sluices

GENERALLY GOOD

g. Seepage or Leakage

SOME NOTED BENEATH  
GATES

THOMSEN ASSOCIATES  
CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

h. Joints - Construction, etc. APPEAR GOOD

i. Foundation UNOBSERVABLE

j. Abutments APPEAR GOOD

k. Control Gates APPEAR GOOD

l. Approach & Outlet Channels GOOD

m. Energy Dissipators (Plunge Pool, etc.) N.A.

n. Intake Structures ALL VALVES OPERATIONAL

o. Stability

p. Miscellaneous

APPENDIX C

HYDROLOGIC/HYDRAULIC: ENGINEERING DATA AND COMPUTATIONS

# THOMSEN ASSOCIATES

CONSULTING ENGINEERS

## CHECK LIST FOR DAMS HYDROLOGIC AND HYDRAULIC ENGINEERING DATA

### AREA-CAPACITY DATA:

	<u>Elevation</u> (ft.)	<u>Surface Area</u> (acres)	<u>Storage Capacity</u> (acre-ft.)
1) Top of Dam	<u>513.1</u>	<u>      </u>	<u>      </u>
2) Design High Water (Max.Design Pool)	<u>516±</u>	<u>      </u>	<u>      </u>
3) Auxiliary Spillway Crest	<u>N.A.</u>	<u>N.A.</u>	<u>N.A.</u>
4) Pool Level with Flashboards	<u>N.A.</u>	<u>N.A.</u>	<u>N.A.</u>
5) Service Spillway Crest	<u>N.A.</u>	<u>N.A.</u>	<u>N.A.</u>

(Ever  
Recorded)

### DISCHARGES

	<u>Volume</u> (cfs)
1) Average Daily	<u>      </u>
2) Spillway @ Maximum High Water	<u>      </u>
3) Spillway @ Design High Water	<u>      </u>
4) Spillway @ Auxiliary Spillway Crest Elevation	<u>N.A.</u>
5) Low Level Outlet	<u>N.A.</u>
6) Total (of all facilities) @ Maximum High Water	<u>      </u>
7) Maximum Known Flood	<u>29,600</u>

# THOMSEN ASSOCIATES

CONSULTING ENGINEERS, ALBANY, N.Y.

## OUTLET STRUCTURES/EMERGENCY DRAWDOWN FACILITIES:

Type: Gate X Sluice \_\_\_\_\_ Conduit \_\_\_\_\_ Penstock \_\_\_\_\_

Shape: RADIAL SECTOR GATES

Size: APPROX. 15' HIGH, APPROX. 110' AND 53' WIDE

Elevations: Entrance Invert VARIABLE

Exit Invert APPROX. 494.5

Tailrace Channel: Elevation APPROX. 494.5

## HYDROMETEROLOGICAL GAGES:

Type: FLOAT

Location: OPERATING HOUSES

Records:

Date - \_\_\_\_\_

Max. Reading - 516 ±

## FLOOD WATER CONTROL SYSTEM:

Warning System: FULL-TIME OPERATOR (24 HR./DAY).

NO FORMAL WARNING SYSTEM.

Method of Controlled Releases (mechanisms):

\_\_\_\_\_

\_\_\_\_\_



# THOMSEN ASSOCIATES

CONSULTING ENGINEERS

CREST:

ELEVATION: 513.1

Type: GATES

Width: N.A.

Length: Approx. 325'

Spillover ALL GATES

Location \_\_\_\_\_

SPILLWAY:

PRINCIPAL

EMERGENCY

513.1

Elevation

N.A.

GATES

Type

Approx. 325'

Width

Type of Control

Uncontrolled

Controlled:

GATES

Type

(Flashboards; gate)

4

Number

2 @ 15' x 110', 2 @ 15' x 53'

Size/Length

Invert Material

Anticipated Length  
of operating service

N.A.

Chute Length

N.A.

Height Between Spillway Crest  
& Approach Channel Invert  
(Weir Flow)

McFarland-Johnson Engineers, Inc.  
171 Front Street  
BINGHAMTON, NEW YORK 13905

JOB MT. MORRIS DAM

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

CALCULATED BY \_\_\_\_\_ DATE \_\_\_\_\_

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SCALE \_\_\_\_\_

STORAGE - OUTFLOW-ELEVATION RELATION FOR MT. MORRIS DAM

ELEV. IN FT. U.S.C. & G.S.	STORAGE IN ACRE-FT.	OUTFLOW IN C.F.S.	REMARKS
598	4660	0	Conservation Pool
760	337,400	0	Spillway Crest
768	364,300	41,500	
772	377,700	78,500	
776	391,100	126,000	
780	405,000	182,000	
784	417,900	247,000	
788	431,300	318,000	
790	438,300	357,000	Top of dam
792	444,700	402,000	
794	451,400	447,000	

NOTE: Above information was obtained from Corps of Engineers, Buffalo District. Conduits in the outlet works were assumed inoperative. During the period of 15th. June to 1st. November, a pool elevation of 598, known as Conservation Pool is maintained. At other times run-of-the-river levels prevail in the reservoir. However, when river flows exceed the natural capacity of the downstream channel, floodwaters are stored.

McFarland-Johnson Engineers, Inc.  
171 Front Street  
BINGHAMTON, NEW YORK 13905

JOB HYDROLOGICAL STUDY DAM # 1, 2, 3, 4

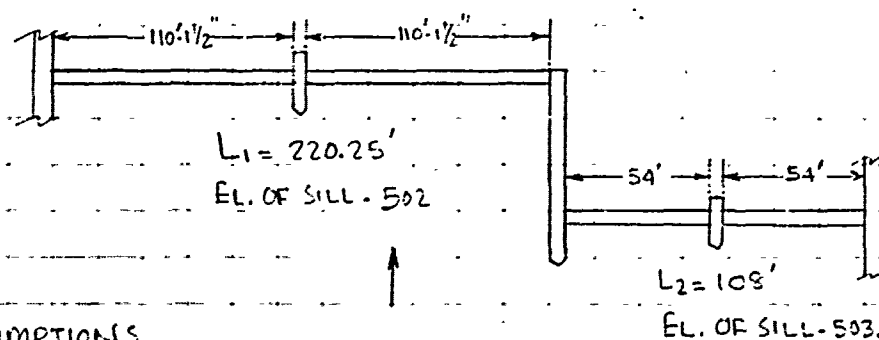
SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

CALCULATED BY P.S. DATE 5/10/77

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SCALE \_\_\_\_\_

# STAGE-DISCHARGE COMPUTATIONS (COURT STREET DAM)



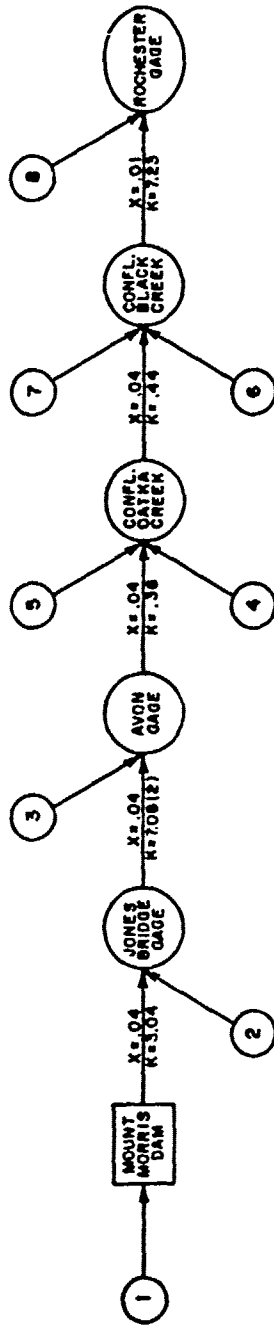
## ASSUMPTIONS

- ① All four gates are lowered.
- ② Coefficient of discharge = 3.1
- ③  $Q = CLH^{3/2}$

ELEV.	H <sub>1</sub>	H <sub>1</sub> <sup>3/2</sup>	H <sub>2</sub>	H <sub>2</sub> <sup>3/2</sup>	L <sub>1</sub>	L <sub>2</sub>	Q <sub>1</sub>	Q <sub>2</sub>	TOTAL
502	0	0	0	0	220.25	108	0	0	0
503	1	1	0	0	"	"	693	0	693
504	2	2.83	.8	.71	"	"	1932	238	2170
505	3	5.19	1.8	2.41	"	"	3543	807	4350
506	4	8.0	2.8	4.68	"	"	5462	1566	7028
507	5	11.18	3.8	7.40	"	"	7633	2477	10110
508	6	14.69	4.8	10.51	"	"	10030	3515	13545
509	7	18.52	5.8	13.97	"	"	12645	4677	17322
510	8	22.62	6.8	17.73	"	"	15444	5936	21380
511	9	27.0	7.8	21.78	"	"	18435	7292	25727
512	10	31.62	8.8	26.10	"	"	21589	8738	30327
513	11	36.48	9.8	30.68	"	"	24909	10271	35180
514	12	41.57	10.8	35.5	"	"	28383	11885	40268
515	13	46.87	11.8	40.53	"	"	32002	13569	45571
516	14	52.38	12.8	45.79	"	"	35764	15320	51084

# SCHEMATIC DIAGRAM OF HYDROLOGIC MODEL

WITH 6-HOUR UNITGRAPHS AND MUSKINGUM ROUTING COEFFICIENTS



RUNOFF DISTRIBUTION IN THOUSANDS OF C.F.S.

HOURS	1 ABOVE DAM DA=1078 SQ. MI.	2 CANABERAGA DA=335 SQ. MI.	3 + 18 LOCAL DA=178 SQ. MI.	4 HONEYE DA=260 SQ. MI.	5 CATKA DA=215 SQ. MI.	6 LOCAL DA=71 SQ. MI.	7 BLACK DA=187 SQ. MI.	8 LOCAL DA=68 SQ. MI.
6	4.9	2.5	1.0	0.1	0.1	0.4	0.1	1.7
12	13.4	7.8	4.7	0.9	0.9	2.4	0.4	3.1
18	23.0	6.2	5.1	3.6	1.2	2.3	0.9	1.2
24	24.9	6.0	3.4	6.3	2.8	1.2	1.3	0.7
30	17.0	4.0	2.2	5.6	4.2	0.7	1.7	0.4
36	8.4	2.8	1.5	3.6	4.2	0.4	2.3	0.2
42	5.6	1.9	0.9	2.4	3.0	0.2	2.8	0.1
48	4.3	1.3	0.6	1.7	2.1	0.1	3.1	0.1
54	3.4	0.8	0.2	1.3	1.5		2.6	
60	2.7	0.5	0.1	1.0	1.1		2.0	
66	2.1	0.2		0.7	0.8		1.4	
72	1.6			0.4	0.5		0.9	
78	1.3							
84	1.0							

D.A. © COURT S.D. ADI  
: 2460 7 4000

GENESSEE RIVER, MOUNT MORRIS, N. Y.  
MOUNT MORRIS RESERVOIR  
SCHEMATIC DIAGRAM  
OF HYDROLOGIC MODEL

U.S. ARMY ENGINEER DISTRICT BUFFALO  
PLATE 43

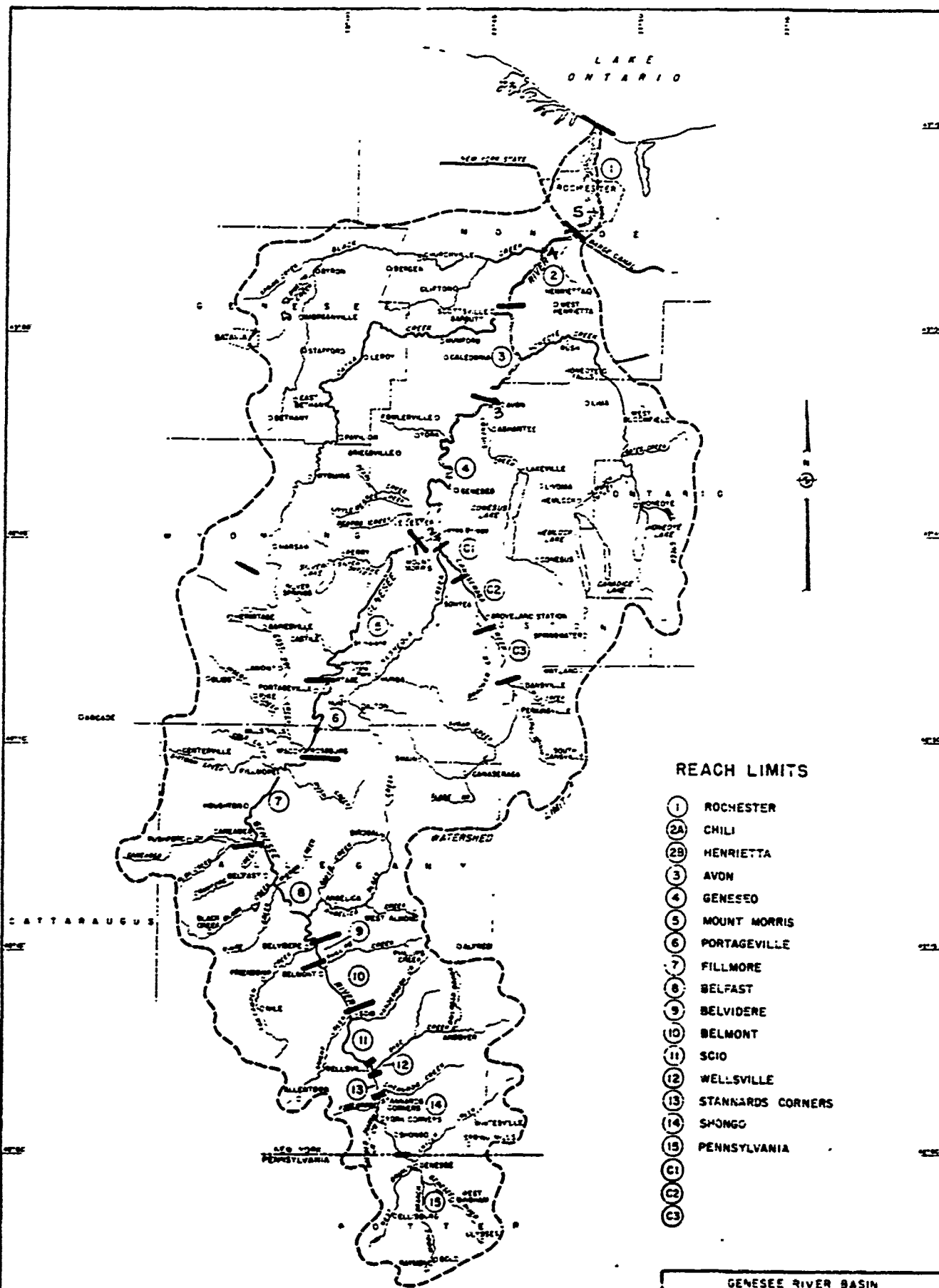


PLATE E

SCALE IN MILES  
0 1 2 3 4

GENESEE RIVER BASIN  
COMPREHENSIVE STUDY  
NEW YORK AND PENNSYLVANIA

BASIN MAP

U S ARMY ENGINEER DISTRICT, BUFFALO



\*\*\*\*\*  
 FLOOD HYDROGRAPH PACKAGE (HEC-1)  
 DAM SAFETY VERSION JULY 1975  
 LAST MODIFICATION 26 Feb 79  
 \*\*\*\*\*

1	A	GENESEE RIVER BASIN									
2	A	HYDROLOGIC-HYDRAULIC ANALYSIS OF SAFETY OF COURT STREET DAM									
3	A	RAILS OF PKF ROUTED THROUGH THE RESERVOIR									
4	B	50	5	0	0	0	0	0	0	0	0
5	B1	5									
6	J	1	0	1							
7	J1	.2	.35	.5	.65	.8	1				
8	K	0	1	0	0	0	0	1			
9	K1	GENESEE RIVER INFLOW HYDROGRAPH AT MOUNT MORRIS DAM									
10	M	1	-1	1075	0	1075	0	0	0	1	0
11	P	0	22.5	52	65	73	84				
12	I	0	0	0	0	0	0	1	.1	0	0
13	U	14									
14	U1	4900	13400	23000	24900	17000	8400	5600	4300	3400	2700
15	U1	2100	1600	1300	1000						
16	X	-1	-.1	2							
17	K	1	2	0	0	0	0	1			
18	K1	ROUTING OF INFLOW HYDROGRAPH USING MODIFIED PULS METHOD									
19	Y	0	0	0	1	1					
20	Y1	1	0	0	0	0	0	337400			
21	Y2	4660	22500	50000	120000	337400	364300	377700	391100	405000	417900
22	Y2431300	438000	444700	451400							
23	Y3	0	0	0	0	0	41500	78500	126000	162000	247000
24	Y3518000	359000	402000	447000							
25	K	0	2	0	0	0	0	1	0	0	0
26	K1	CANASERAGA CREEK INFLOW HYDROGRAPH AT JONES BRIDGE GAGE									
27	M	1	-1	335	0	335	0	0	0	1	0
28	P	0	22.1	73	83	93	103				
29	I	0	0	0	0	0	0	1	.1	0	0
30	U	11									
31	U1	2500	7800	8200	6000	4000	2800	1900	1300	800	500
32	U1	200									
33	X	-1	-.1	2							
34	K	2	2	0	0	0	0	1	0	0	0
35	K1	COMBINE OUTFLOW-MOUNT MORRIS DAM AND CANASERAGA CREEK INFLOW									
36	K	1	3	0	0	0	0	1	0	0	0
37	K1	ROUTE COMBINE FLOWS TO AVON GAGE USING MUSKINGUM METHOD									
38	Y	0	0	0	0	1					
39	Y1	2	0	0	7.06	.04	0	0			
40	K	0	3	0	0	0	0	1	0	0	0
41	K1	LOCAL INFLOW HYDROGRAPH AT AVON GAGE									
42	M	1	-1	256	0	256	0	0	0	1	0
43	P	0	22	77	87	97	107				
44	I	0	0	0	0	0	0	1	.1	0	0
45	U	10									
46	U1	1000	4700	5100	3400	2200	1500	900	500	200	100
47	X	-1	-.1	2							
48	K	2	3	0	0	0	0	1	0	0	0
49	K1	COMBINE FLOWS AT AVON GAGE									
50	K	1	4	0	0	0	0	1			



51	K1	ROUTE FLOWS TO CONFLUENCE OF BLACK CREEK BY LAGGING FLOWS									
52	I	0	0	0	0	1					
53	Y1	0	0	1	0	0	0	0	0	0	0
54	K	0	4	0	0	0	0	1	0	0	0
55	K1	HONEYCREEK CREEK INFLOW HYDROGRAPH									
56	M	1	-1	200	0	260	0	0	0	1	0
57	P	0	21.5	77	67	97	107				
58	I	0	0	0	0	0	0	1	.1	0	0
59	U	12									
60	U1	100	500	3000	6300	5600	3000	2400	1700	1300	1000
61	U1	700	400								
62	X	-1	-1	2							
63	K	0	4	0	0	0	0	1	0	0	0
64	K1	JAIKA CREEK INFLOW HYDROGRAPH									
65	M	1	-1	215	0	215	0	0	0	1	0
66	P	0	21.5	78	88	98	108				
67	I	0	0	0	0	0	0	1	.1	0	0
68	U	12									
69	U1	100	400	1200	2800	4200	4200	3000	2100	1500	1100
70	U1	800	500								
71	X	-1	-1	2							
72	K	0	4	0	0	0	0	1	0	0	0
73	K1	LOCAL INFLOW HYDROGRAPH									
74	M	1	-1	71	0	71	0	0	0	1	0
75	P	0	21.5	92	102	113	124				
76	I	0	0	0	0	0	0	1	.1	0	0
77	U	8									
78	U1	400	2400	2300	1200	700	400	200	100		
79	X	-1.5	-1	2							
80	K	0	4	0	0	0	0	1	0	0	0
81	K1	BLACK CREEK INFLOW HYDROGRAPH									
82	M	1	-1	167	0	187	0	0	0	1	0
83	P	0	21.5	81	91	101	112				
84	I	0	0	0	0	0	0	1	.1	0	0
85	U	12									
86	U1	100	400	900	1300	1700	2300	2600	3100	2600	2000
87	U1	1400	900								
88	X	-1	-1	2							
89	K	5	4	0	0	0	0	1	0	0	0
90	K1	COMBINE FLOWS AT CONFLUENCE OF BLACK CREEK									
91	K	1	5	0	0	0	0	1	0	0	0
92	K1	ROUTE COMBINE FLOWS TO COURT STREET DAM OUTLET USING MUSKINGUM METHOD									
93	Y	0	0	0	0	1					
94	Y1	1	0	0	6.93	.01					
95	K	0	5	0	0	0	0	1	0	0	0
96	K1	LOCAL INFLOW HYDROGRAPH AT OUTLET OF COURT STREET DAM									
97	M	1	-1	61	0	61	0	0	0	1	0
98	P	0	21.5	94	104	116	126				
99	I	0	0	0	0	0	0	1	.1	0	0
100	U	8									





101  
102  
103  
104  
105

U1	1500	2800	1100	600	400	200	100	100		
A	-2	-1	2							
K	2	5	0	0	0	0	1	9		0
K1	TOTAL GOLF-DOA AT COURT STREET DASH									
K	99									



PREVIEW OF SEQUENCE OF SIMPLEX NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AT	1
RJUIE HYDROGRAPH TO	2
RUNOFF HYDROGRAPH AT	2
COMBINE 2 HYDROGRAPHS AT	2
RJUIE HYDROGRAPH TO	3
RUNOFF HYDROGRAPH AT	3
COMBINE 2 HYDROGRAPHS AT	3
RJUIE HYDROGRAPH TO	4
RUNOFF HYDROGRAPH AT	4
RUNOFF HYDROGRAPH AT	4
RUNOFF HYDROGRAPH AT	4
RUNOFF HYDROGRAPH AT	4
COMBINE 5 HYDROGRAPHS AT	4
RJUIE HYDROGRAPH TO	5
RUNOFF HYDROGRAPH AT	5
COMBINE 2 HYDROGRAPHS AT	5
END OF NETWORK	



\*\*\*\*\*  
 FLOOD HYDROGRAPH PACKAGE (HEC-1)  
 DAM SAFETY VERSION JULY 1976  
 LAST MODIFICATION 26 Feb 79  
 \*\*\*\*\*

TIME OF EXECUTION 20-AUG-80 11:35:23

GENESEE RIVER BASIN  
 HYDROLOGIC-HYDRAULIC ANALYSIS OF SAFETY OF COURT STREET DAM  
 RATIOS OF PMF ROUTED THROUGH THE RESERVOIR

JCB SPECIFICATION  
 NW NHR NMIN IDAY IHR IMIV METRC IPLT IPRI NSTAN  
 50 6 0 0 0 0 0 0 0 0  
 JUPER NMI LROPI TRACE  
 5 0 0 0

MULTI-PLAN ANALYSES TO BE PERFORMED  
 NPLAN= 1 NRTIO= 6 LRTIO= 1  
 RTIOS= 0.20 0.35 0.50 0.65 0.80 1.00

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SUB-AREA RUNOFF COMPUTATION

GENESEE RIVER INFLOW HYDROGRAPH AT MOUNT MORRIS DAM

ISTAQ ICUMP IECON ITAPE JPLT JPRT INAME ISTAGE IAUTO  
 1 0 0 0 0 0 1 0 0

HYDROGRAPH DATA  
 IHIDG IUNG TAREA SNAP TRSDA TRSPC RATIO ISNO INAME LOCAL  
 1 -1 1075.00 0.00 1075.00 0.00 0.000 0 1 0

PRECIP DATA  
 SPFE PMS R6 R12 R24 R46 R72 R96  
 0.00 22.50 52.00 65.00 73.00 84.00 0.00 0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.913

LOSS DATA  
 LROPT STRKR DLTKR RTIOL ERAIN STRKS RTIOK STRIL CNSTL ALSMX RTIMP  
 0 0.00 0.00 1.00 0.00 0.00 1.00 1.00 0.10 0.00 0.00

GIVEN UNIT GRAPH, NUHQ= 14  
 4900. 13400. 23000. 24900. 17000. 8400. 5600. 4300. 3400. 2700.  
 2100. 1600. 1300. 1000.  
 UNIT GRAPH TOTALS 113000. CFS OR 0.98 INCHES OVER THE AREA

RECESSION DATA  
 STRIO= -1.00 ORCSA= -0.10 RTIOR= 2.00

END-OF-PERIOD FLOW  
 MU.DA HR.MN PERIOD RAIN EXCS LOSS COMP Q MU.DA HR.MN PERIOD RAIN EXCS LOSS COMP Q  
 1.01 6.00 1 0.10 0.00 0.10 1003. 1.07 12.00 26 0.00 0.00 0.00 15496.  
 1.01 12.00 2 0.40 0.00 0.40 936. 1.07 12.00 27 0.00 0.00 0.00 14458.

McFARLAND-JOHNSON ENGINEERS, INC.

1.01	18.00	3	1.01	0.70	0.91	4285.	1.08	0.00	28	0.00	0.00	0.00	13490.
1.02	0.00	4	0.15	0.00	0.15	10145.	1.08	6.00	29	0.00	0.00	0.00	12586.
1.02	6.00	5	0.00	0.00	0.00	17055.	1.08	12.00	30	0.00	0.00	0.00	11744.
1.02	12.00	6	2.07	2.07	0.00	23953.	1.08	18.00	31	0.00	0.00	0.00	10957.
1.02	18.00	7	10.00	10.00	0.00	90928.	1.09	0.00	32	0.00	0.00	0.00	10223.
1.03	0.00	8	0.99	0.39	0.60	192426.	1.09	6.00	33	0.00	0.00	0.00	9539.
1.03	6.00	9	0.00	0.00	0.00	293945.	1.09	12.00	34	0.00	0.00	0.00	8900.
1.03	12.00	10	0.00	0.00	0.00	299012.	1.09	18.00	35	0.00	0.00	0.00	8304.
1.03	18.00	11	0.00	0.00	0.00	201506.	1.10	0.00	36	0.00	0.00	0.00	7748.
1.04	0.00	12	0.00	0.00	0.00	105397.	1.10	6.00	37	0.00	0.00	0.00	7229.
1.04	6.00	13	0.00	0.00	0.00	70670.	1.10	12.00	38	0.00	0.00	0.00	6745.
1.04	12.00	14	0.00	0.00	0.00	54208.	1.10	18.00	39	0.00	0.00	0.00	6293.
1.04	18.00	15	0.00	0.00	0.00	42917.	1.11	0.00	40	0.00	0.00	0.00	5872.
1.05	0.00	16	0.00	0.00	0.00	34011.	1.11	6.00	41	0.00	0.00	0.00	5479.
1.05	6.00	17	0.00	0.00	0.00	23916.	1.11	12.00	42	0.00	0.00	0.00	5112.
1.05	12.00	18	0.00	0.00	0.00	26980.	1.11	18.00	43	0.00	0.00	0.00	4769.
1.05	18.00	19	0.00	0.00	0.00	25173.	1.12	0.00	44	0.00	0.00	0.00	4450.
1.06	0.00	20	0.00	0.00	0.00	23487.	1.12	6.00	45	0.00	0.00	0.00	4152.
1.06	6.00	21	0.00	0.00	0.00	21914.	1.12	12.00	46	0.00	0.00	0.00	3874.
1.06	12.00	22	0.00	0.00	0.00	20447.	1.12	18.00	47	0.00	0.00	0.00	3615.
1.06	18.00	23	0.00	0.00	0.00	19076.	1.13	0.00	48	0.00	0.00	0.00	3372.
1.07	0.00	24	0.00	0.00	0.00	17800.	1.13	6.00	49	0.00	0.00	0.00	3147.
1.07	6.00	25	0.00	0.00	0.00	16608.	1.13	12.00	50	0.00	0.00	0.00	2936.

SUM 17.25 13.29 3.96 1838290.  
( 438.)( 337.)( 101.)(52054.56)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	299012.	296479.	235844.	120159.	1836321.
CMS	8467.	8395.	6078.	3403.	51999.
INCHES		2.57	8.16	12.48	15.89
MM		65.10	207.35	316.92	403.61
AC-FT		147014.	467789.	714994.	910572.
THOUS CU M		181339.	577010.	881931.	1123174.

HYDROGRAPH AT STA 1 FOR PLAN 1, R110 1									
201.	187.	857.	2029.	3411.	5791.	18166.	38485.	58789.	59802.
40301.	21079.	14134.	10642.	8583.	6802.	5783.	5396.	5035.	4697.
4383.	4069.	3810.	3500.	3322.	3099.	2892.	2698.	2517.	2349.
2191.	2045.	1908.	1780.	1661.	1550.	1446.	1349.	1259.	1174.
1096.	1022.	954.	890.	830.	775.	723.	674.	629.	587.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	59802.	59296.	47169.	24032.	367264.
CMS	1693.	1679.	1336.	681.	10400.
INCHES		0.51	1.63	2.50	3.18
MM		13.03	41.47	63.38	80.72
AC-FT		29403.	93558.	142999.	182114.
THOUS CU M		36268.	115402.	176386.	224635.

HYDROGRAPH AT STA 1 FOR PLAN 1, R110 2									
351.	328.	1500.	3551.	5969.	10134.	31825.	67349.	102861.	104654.
70527.	36889.	24734.	16973.	15021.	11904.	10121.	9443.	8811.	8221.
7670.	7156.	6077.	6230.	5813.	5424.	5060.	4721.	4405.	4110.
3835.	3578.	3339.	3115.	2906.	2712.	2530.	2361.	2205.	2055.
1918.	1789.	1609.	1558.	1453.	1356.	1265.	1180.	1101.	1028.

McFARLAND-JOHNSON ENGINEERS, INC.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	104654.	103768.	82545.	42050.	642712.
CMS	2963.	2938.	2337.	1191.	18200.
INCHES		0.90	2.80	4.37	5.50
MM		22.81	72.57	110.92	141.20
AC-FT		51455.	163720.	250248.	318700.
THOUS CU M		63409.	201953.	308070.	393111.

HYDROGRAPH AT STA				1 FOR PLAN 1, RTIO 3						
502.	408.	2143.	5073.	8527.	14477.	45464.	96213.	146973.	149506.	
100753.	52698.	35335.	27104.	21459.	17005.	14458.	13490.	12580.	11744.	
10957.	10223.	9539.	8900.	8304.	7748.	7229.	6745.	6293.	5872.	
5479.	5112.	4769.	4450.	4152.	3874.	3615.	3372.	3147.	2936.	
2739.	2556.	2385.	2225.	2076.	1937.	1807.	1686.	1573.	1468.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	149506.	148239.	117922.	60079.	918161.
CMS	4234.	4198.	3339.	1701.	25999.
INCHES		1.28	4.08	0.24	7.95
MM		32.56	103.67	158.46	201.81
AC-FT		73507.	233895.	357497.	455286.
THOUS CU M		90670.	288505.	440906.	561587.

HYDROGRAPH AT STA				1 FOR PLAN 1, RTIO 4						
652.	608.	2705.	6594.	11056.	16820.	59103.	125077.	191065.	194358.	
130979.	68508.	45935.	35235.	27896.	22107.	18796.	17537.	16362.	15267.	
14244.	13290.	12400.	11570.	10795.	10072.	9396.	8768.	8181.	7633.	
7122.	6645.	6200.	5785.	5398.	5036.	4699.	4384.	4091.	3817.	
3501.	3323.	3100.	2893.	2699.	2518.	2349.	2192.	2045.	1908.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	194358.	192711.	153290.	78103.	1193608.
CMS	5504.	5457.	4341.	2212.	33799.
INCHES		1.67	5.31	8.11	10.33
MM		42.30	134.79	206.00	262.35
AC-FT		95559.	304063.	464746.	591872.
THOUS CU M		117871.	375056.	532555.	730063.

HYDROGRAPH AT STA				1 FOR PLAN 1, RTIO 5						
802.	749.	3420.	8116.	13644.	23103.	72742.	153941.	235156.	239210.	
161205.	84317.	56536.	43367.	34334.	27209.	23133.	21584.	20138.	18790.	
17531.	16357.	15202.	14240.	13286.	12397.	11506.	10792.	10069.	9395.	
8760.	8179.	7031.	7120.	6643.	6198.	5783.	5390.	5035.	4697.	
4383.	4089.	3816.	3560.	3322.	3099.	2892.	2698.	2517.	2349.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	239210.	237183.	188675.	96127.	1469050.
CMS	6774.	6716.	5343.	2722.	41599.
INCHES		2.05	6.53	9.98	12.71
MM		52.13	165.88	253.54	322.89
AC-FT		117011.	374232.	571995.	728458.
THOUS CU M		145072.	461008.	705545.	898539.



HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 0

TIME	PEAK	5-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1003.	4205.	17055.	20953.	90928.	192420.
201500.	10145.	17055.	20953.	90928.	293945.
21914.	70670.	14917.	28910.	20980.	25173.
10957.	19015.	16608.	15490.	14458.	12587.
5479.	9539.	8304.	7740.	7229.	11744.
	5112.	4450.	3874.	3615.	5872.
					2936.

HYDROGRAPH ROUTING

TIME	PEAK	5-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1003.	4205.	17055.	20953.	90928.	192420.
201500.	10145.	17055.	20953.	90928.	293945.
21914.	70670.	14917.	28910.	20980.	25173.
10957.	19015.	16608.	15490.	14458.	12587.
5479.	9539.	8304.	7740.	7229.	11744.
	5112.	4450.	3874.	3615.	5872.
					2936.

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ROUTING OF INFLUX HYDROGRAPH USING MODIFIED PULS METHOD

TIME	PEAK	5-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1003.	4205.	17055.	20953.	90928.	192420.
201500.	10145.	17055.	20953.	90928.	293945.
21914.	70670.	14917.	28910.	20980.	25173.
10957.	19015.	16608.	15490.	14458.	12587.
5479.	9539.	8304.	7740.	7229.	11744.
	5112.	4450.	3874.	3615.	5872.
					2936.

STORAGE

TIME	PEAK	5-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1003.	4205.	17055.	20953.	90928.	192420.
201500.	10145.	17055.	20953.	90928.	293945.
21914.	70670.	14917.	28910.	20980.	25173.
10957.	19015.	16608.	15490.	14458.	12587.
5479.	9539.	8304.	7740.	7229.	11744.
	5112.	4450.	3874.	3615.	5872.
					2936.

STATION 2, PLAN 1, RTIO 1

TIME	PEAK	5-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1003.	4205.	17055.	20953.	90928.	192420.
201500.	10145.	17055.	20953.	90928.	293945.
21914.	70670.	14917.	28910.	20980.	25173.
10957.	19015.	16608.	15490.	14458.	12587.
5479.	9539.	8304.	7740.	7229.	11744.
	5112.	4450.	3874.	3615.	5872.
					2936.

STAGE

TIME	PEAK	5-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1003.	4205.	17055.	20953.	90928.	192420.
201500.	10145.	17055.	20953.	90928.	293945.
21914.	70670.	14917.	28910.	20980.	25173.
10957.	19015.	16608.	15490.	14458.	12587.
5479.	9539.	8304.	7740.	7229.	11744.
	5112.	4450.	3874.	3615.	5872.
					2936.

McFARLAND-JOHNSON ENGINEERS, INC.

0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	52055.	51242.	42492.	23715.	366505.
CMS	1474.	1451.	1203.	672.	10300.
INCHES		0.44	1.47	2.46	3.17
MM		11.26	37.30	62.55	80.57
AC-FT		25409.	84282.	141112.	181768.
INJUS CU M		31342.	103961.	174059.	224207.

MAXIMUM STORAGE = 308123.

STATION 2, PLAN 1, RFI 2

OUTFLOW									
194.	275.	628.	1678.	3383.	5966.	14274.	33814.	71907.	100718.
86437.	56906.	37604.	26978.	22348.	17431.	13879.	11612.	10237.	9284.
8543.	7918.	7364.	6800.	6396.	5966.	5565.	5192.	4844.	4520.
4217.	3935.	3071.	3425.	3196.	2982.	2782.	2596.	2422.	2260.
2108.	1967.	1836.	1713.	1598.	1491.	1391.	1298.	1211.	1130.

STOR									
337526.	337578.	337607.	338486.	339593.	341207.	340652.	359318.	375312.	383908.
380503.	379004.	361905.	355103.	351886.	348699.	340397.	344927.	344035.	343418.
342938.	342532.	342173.	341847.	341546.	341267.	341007.	340765.	340540.	340330.
340133.	339950.	339700.	339620.	339472.	339333.	339203.	339083.	338970.	338865.
338767.	338675.	338590.	338510.	338436.	338366.	338302.	338241.	338185.	338132.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	100718.	94577.	76855.	41508.	641469.
CMS	2652.	2678.	2176.	1175.	18165.
INCHES		0.82	2.66	4.31	5.55
MM		20.79	67.57	109.48	141.00
AC-FT		40898.	152440.	240987.	318094.
INJUS CU M		57848.	188032.	304054.	392363.

MAXIMUM STORAGE = 383908.

STATION 2, PLAN 1, RFI 3

OUTFLOW									
278.	392.	897.	2397.	4833.	8523.	20391.	51497.	112995.	147331.
125197.	79851.	50549.	36965.	29947.	24018.	19433.	16412.	14545.	13228.
12189.	11304.	10517.	9799.	9137.	8522.	7950.	7417.	6920.	6457.
6024.	5621.	5244.	4893.	4565.	4260.	3975.	3708.	3460.	3228.
3012.	2810.	2622.	2447.	2283.	2130.	1987.	1854.	1730.	1614.

STOR  
McFARLAND - JOHNSON ENGINEERS, INC.



337500.	337054.	337962.	336954.	340533.	342925.	350017.	307920.	307431.	396395.
390873.	378001.	307577.	301300.	350811.	352900.	349596.	340030.	340820.	345974.
345301.	344127.	344217.	343752.	343322.	342924.	342553.	342200.	341500.	341505.
341305.	341043.	340799.	340572.	340359.	340101.	339776.	339004.	339043.	339493.
339352.	339222.	339100.	338906.	338600.	338701.	338608.	338002.	338521.	338446.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	147331.	130204.	112799.	59305.	910413.
CMS	4172.	3859.	3194.	1079.	25950.
INCHES		1.18	3.90	6.10	7.93
MM		29.95	99.17	156.42	201.42
AC-FT		67509.	223734.	352890.	454420.
INDUS CU M		83345.	275972.	435233.	500518.

MAXIMUM STORAGE = 396395.

STATION 2, PLAN 1, RFD 4

OUTFLOW									
301.	510.	1107.	3110.	6203.	11080.	26508.	72783.	153405.	193880.
161495.	101455.	62491.	44007.	30409.	30597.	24760.	21111.	18808.	17152.
15826.	14687.	13000.	12737.	11877.	11078.	10335.	9042.	8996.	8394.
7832.	7307.	6818.	6361.	5935.	5538.	5167.	4821.	4498.	4197.
3916.	3654.	3409.	3101.	2908.	2769.	2583.	2410.	2249.	2098.

STGR									
337034.	337730.	338150.	339420.	341473.	344582.	354582.	375029.	397917.	407358.
399910.	384170.	371902.	305454.	301000.	355909.	353449.	351084.	349591.	346518.
347650.	340920.	340259.	345050.	345098.	344581.	344099.	343650.	343231.	342841.
342476.	342130.	341819.	341523.	341247.	340990.	340749.	340525.	340310.	340120.
339936.	339706.	339010.	339462.	339324.	339195.	339075.	338902.	338858.	338700.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	193080.	177688.	148990.	77108.	1191337.
CMS	5490.	5032.	4219.	2183.	33735.
INCHES		1.54	5.16	8.01	10.31
MM		39.05	130.99	203.37	261.05
AC-FT		80110.	295517.	450022.	590740.
INDUS CU M		100602.	364514.	505940.	720074.

MAXIMUM STORAGE = 407358.

McFARLAND-JOHNSON ENGINEERS, INC.





## STATION 2, PLAN 1, RTIO 5

OUTFLOW									
444.	621.	1435.	3835.	7733.	13637.	32626.	96420.	195649.	242009.
195575.	121733.	74360.	54521.	41744.	35000.	29829.	25695.	23020.	21052.
17452.	18005.	10017.	15074.	14617.	13634.	12720.	11867.	11072.	10331.
9039.	8993.	8391.	7029.	7305.	6616.	6359.	5933.	5530.	5165.
4819.	4497.	4190.	3915.	3652.	3408.	3180.	2967.	2700.	2583.

STOR									
337660.	337807.	337331.	339086.	342413.	346240.	350548.	382755.	407310.	416909.
407094.	389895.	376201.	369915.	364403.	369475.	356735.	354055.	352322.	351046.
350009.	349109.	348301.	347560.	346874.	346238.	345045.	345092.	344577.	344056.
343048.	343229.	342839.	342475.	342135.	341810.	341522.	341246.	340986.	340748.
340524.	340315.	340120.	339937.	339767.	339609.	339461.	339323.	339194.	339074.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	242009.	218792.	165075.	94916.	1466261.
C45	6653.	6195.	5241.	2666.	41520.
INCHES		1.09	6.41	9.80	12.69
44		48.09	162.71	250.34	322.25
AC-FT		108492.	367091.	504707.	727071.
INDUS CU 4		133823.	452800.	696655.	896629.

MAXIMUM STORAGE = 416909.

## STATION 2, PLAN 1, RTIO 6

OUTFLOW									
550.	784.	1795.	4794.	9667.	17047.	40782.	129499.	249999.	302700.
243223.	147303.	90492.	66118.	51850.	41139.	35765.	31449.	28470.	26182.
24256.	22554.	21009.	19587.	16266.	17042.	15699.	14834.	13840.	12913.
12048.	11242.	10449.	9700.	9131.	8520.	7949.	7417.	6920.	6457.
6024.	5621.	5244.	4893.	4565.	4200.	3975.	3708.	3400.	3228.

STOR									
337760.	337908.	338503.	340508.	343666.	348450.	363635.	391919.	418406.	428428.
417150.	396403.	381003.	373216.	368048.	364060.	360596.	357785.	355858.	354371.
353122.	352019.	351016.	350090.	349241.	348446.	347706.	347015.	346371.	345770.
345210.	344087.	343199.	343743.	343319.	342922.	342553.	342207.	341880.	341585.
341305.	341043.	340799.	340572.	340359.	340161.	339970.	339804.	339643.	339493.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 McFARLAND-JOHNSON ENGINEERS, INC.

CFS	302780.	270390.	233583.	115577.	1832027.
CMS	0574.	7025.	6014.	331.	51900.
INCHES	2.39	6.09	6.09	12.22	15.00
AC-F1	137053.	403300.	700170.	908840.	402.85
THOUS CU M	169052.	571479.	871056.	1121037.	

MAXIMUM STORAGE = 426428.

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# SUB-AREA RUNOFF COMPUTATION

## CAYASERAGA CREEK INFLOW HYDROGRAPH AT JONES BRIDGE GAGE

ISIAU	ICOMP	IECON	ITAPE	JPLT	JPKT	INAME	ISTAGE	IAUTO
2	0	0	0	0	0	1	0	0

### HYDROGRAPH DATA

INHYD	ILNG	IAREA	SNAP	IRSEA	TRSPC	RAIIO	ISNG	ISAME	LOCAL
1	-1	335.00	0.00	335.00	0.00	0.000	0	1	0

### PRECIP DATA

SPFE	P4S	R6	R12	R24	R40	R72	R96
0.00	22.10	73.00	83.00	93.00	103.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.093

### LOSS DATA

LRPT	SIRK	DLIK	RIOL	ERAIN	SIRK	RIOL	SIRTL	CNSTL	ALSHX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

### GIVEY UNIT GRAPH, NUNGS= 11

2500.	7800.	8200.	0000.	4000.	2800.	1900.	1300.	800.	500.
200.									

UNIT GRAPH TOTALS 36000. CFS OR 1.00 INCHES OVER THE AREA

### RECESSION DATA

SIRI= -1.00 GRCSN= -0.10 RIOL= 2.00

### END-OF-PERIOD FLOW

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP
1.01	6.00	1	0.00	0.00	0.00	313.	1.07	12.00	26	0.00	0.00	0.00	5958.
1.01	12.00	2	0.21	0.00	0.21	292.	1.07	18.00	27	0.00	0.00	0.00	5559.
1.01	18.00	3	1.55	0.52	1.03	1567.	1.08	0.00	28	0.00	0.00	0.00	5187.
1.02	0.00	4	0.13	0.00	0.13	4293.	1.08	6.00	29	0.00	0.00	0.00	4839.
1.02	6.00	5	0.79	0.19	0.60	4956.	1.08	12.00	30	0.00	0.00	0.00	4515.
1.02	12.00	6	1.97	1.37	0.60	8235.	1.08	18.00	31	0.00	0.00	0.00	4213.
1.02	18.00	7	14.40	13.80	0.60	49037.	1.09	0.00	32	0.00	0.00	0.00	3931.
1.03	0.00	8	1.18	0.58	0.60	123138.	1.09	6.00	33	0.00	0.00	0.00	3568.
1.03	6.00	9	0.00	0.00	0.00	127675.	1.09	12.00	34	0.00	0.00	0.00	3422.
1.03	12.00	10	0.00	0.00	0.00	94451.	1.09	18.00	35	0.00	0.00	0.00	3193.
1.03	18.00	11	0.00	0.00	0.00	63478.	1.10	0.00	36	0.00	0.00	0.00	2979.
1.04	0.00	12	0.00	0.00	0.00	44235.	1.10	6.00	37	0.00	0.00	0.00	2780.
1.04	6.00	13	0.00	0.00	0.00	30031.	1.10	12.00	38	0.00	0.00	0.00	2593.
1.04	12.00	14	0.00	0.00	0.00	20370.	1.10	18.00	39	0.00	0.00	0.00	2420.

McFARLAND-JOHNSON ENGINEERS, INC.

1.04	10.00	15	0.00	0.00	0.00	12771.	1.11	0.00	40	0.00	0.00	0.00	2250.
1.05	0.00	16	0.00	0.00	0.00	11910.	1.11	0.00	41	0.00	0.00	0.00	2106.
1.05	0.00	17	0.00	0.00	0.00	11110.	1.11	12.00	42	0.00	0.00	0.00	1905.
1.05	12.00	18	0.00	0.00	0.00	10374.	1.11	18.00	43	0.00	0.00	0.00	1834.
1.05	10.00	19	0.00	0.00	0.00	9679.	1.12	0.00	44	0.00	0.00	0.00	1711.
1.06	0.00	20	0.00	0.00	0.00	9031.	1.12	6.00	45	0.00	0.00	0.00	1596.
1.06	0.00	21	0.00	0.00	0.00	8420.	1.12	12.00	46	0.00	0.00	0.00	1490.
1.06	12.00	22	0.00	0.00	0.00	7862.	1.12	18.00	47	0.00	0.00	0.00	1390.
1.06	10.00	23	0.00	0.00	0.00	7335.	1.13	0.00	48	0.00	0.00	0.00	1297.
1.07	0.00	24	0.00	0.00	0.00	6844.	1.13	6.00	49	0.00	0.00	0.00	1210.
1.07	0.00	25	0.00	0.00	0.00	6386.	1.13	12.00	50	0.00	0.00	0.00	1129.

SUM 20.32 16.46 3.85 747256.  
( 515.)( 415.)( 98.)(21159.93)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	127075.	125500.	100430.	49810.	740533.
CMS	3021.	3554.	2644.	1410.	21139.
1-CHES		3.49	11.16	15.00	20.73
MM		88.52	283.34	421.58	520.54
AC-FI		62235.	199201.	296493.	370181.
INDUS CU A		76765.	245711.	365595.	450612.

HYDROGRAPH AT STA					2 FOR PLAN 1, RTIO 1				
63.	58.	313.	859.	991.	1047.	9607.	24020.	45575.	18890.
12696.	8047.	5908.	4074.	2554.	2383.	2224.	2075.	1930.	1800.
1005.	1572.	1467.	1309.	1277.	1192.	1112.	1037.	908.	903.
843.	780.	734.	684.	639.	590.	556.	519.	484.	452.
421.	393.	307.	342.	319.	298.	276.	259.	242.	220.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	25575.	25101.	20060.	9902.	149307.
CMS	744.	711.	569.	282.	4228.
1-CHES		0.70	2.23	3.32	4.15
MM		17.70	56.67	84.32	105.31
AC-FI		12447.	39040.	59279.	74036.
INDUS CU A		15353.	49142.	73119.	91322.

HYDROGRAPH AT STA					2 FOR PLAN 1, RTIO 2				
109.	102.	540.	1503.	1735.	2802.	17163.	43098.	44750.	33058.
22217.	15402.	10511.	7129.	4470.	4171.	3691.	3031.	3388.	3161.
2949.	2752.	2567.	2395.	2235.	2065.	1946.	1815.	1694.	1580.
1475.	1370.	1284.	1196.	1117.	1043.	973.	908.	847.	790.
737.	689.	642.	599.	559.	521.	486.	454.	423.	395.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	44750.	43927.	35151.	17434.	201290.
CMS	1207.	1244.	995.	494.	7399.
1-CHES		1.22	3.90	5.81	7.26
MM		30.98	99.17	147.55	184.29
AC-FI		21782.	69720.	103737.	129563.
INDUS CU A		26860.	85993.	127950.	159814.

HYDROGRAPH AT STA					2 FOR PLAN 1, RTIO 3				
150.	140.	703.	2147.	2478.	4117.	5519.	61569.	63937.	47226.

McFARLAND-JOHNSON ENGINEERS, INC.

31739.	22119.	15010.	10185.	6380.	5950.	5559.	5107.	4839.	4515.
4213.	3931.	3008.	3422.	3193.	2979.	2780.	2593.	2420.	2258.
2100.	1905.	1834.	1711.	1590.	1490.	1390.	1297.	1210.	1129.
1053.	933.	917.	850.	798.	745.	695.	640.	605.	564.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	63937.	62753.	50215.	24905.	373200.
CMS	1811.	1777.	1422.	705.	10570.
INCHES		1.74	5.58	8.30	10.36
MM		44.26	141.67	210.79	263.27
AC-FT		31117.	99600.	148190.	185091.
THOUS CU M		36383.	122855.	182797.	228300.

HYDROGRAPH AT STA 2 FOR PLAN 1, RILL 4

203.	190.	1018.	2791.	3221.	5353.	1874.	80040.	83118.	61393.
41261.	28753.	19520.	13240.	8301.	7745.	7227.	6743.	6291.	5870.
5477.	5110.	4700.	4449.	4151.	3673.	3013.	3371.	3146.	2935.
2730.	2555.	2744.	2224.	2075.	1935.	1807.	1086.	1573.	1407.
1309.	1270.	1192.	1112.	1038.	908.	903.	843.	766.	734.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	83110.	81579.	65280.	32377.	485246.
CMS	2354.	2310.	1849.	917.	13741.
INCHES		2.27	7.25	10.79	15.47
MM		57.54	184.17	274.03	342.25
AC-FT		40452.	129481.	192555.	240618.
THOUS CU M		49497.	159712.	237037.	290798.

HYDROGRAPH AT STA 2 FOR PLAN 1, RILL 5

250.	233.	1253.	3434.	3965.	6588.	39230.	98511.	102300.	75501.
50783.	35388.	24025.	16290.	10217.	9533.	8694.	8299.	7743.	7225.
6741.	6209.	5808.	5475.	5109.	4700.	4447.	4149.	3872.	3612.
3370.	3145.	2934.	2730.	2554.	2383.	2224.	2075.	1936.	1800.
1065.	1572.	1467.	1369.	1277.	1192.	1112.	1037.	968.	903.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	102300.	100405.	80344.	39848.	597226.
CMS	2897.	2843.	2275.	1128.	16912.
INCHES		2.79	8.92	13.28	16.58
MM		70.82	220.67	337.27	421.23
AC-FT		49788.	159361.	237114.	290145.
THOUS CU M		61412.	196569.	292470.	365290.

HYDROGRAPH AT STA 2 FOR PLAN 1, RILL 6

313.	292.	1507.	4293.	4950.	8235.	49037.	123138.	127875.	94451.
63478.	44235.	30031.	20370.	12771.	11916.	11118.	10374.	9679.	9031.
8426.	7802.	7335.	6844.	6386.	5958.	5559.	5187.	4839.	4515.
4213.	3931.	3668.	3422.	3193.	2979.	2780.	2593.	2420.	2258.
2100.	1905.	1834.	1711.	1590.	1490.	1390.	1297.	1210.	1129.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	127675.	125506.	100430.	49010.	740533.
CMS	3621.	3554.	2844.	1410.	21139.
INCHES		3.49	11.16	16.60	20.73
MM		88.52	283.34	420.57	520.54

McFARLAND-JOHNSON ENGINEERS, INC.

AC-FI 02235. 199201. 290393. 370101.  
 INJUS CU M 70705. 240711. 300595. 400012.

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# COMBINE HYDROGRAPHS

COMBINE JOINTLY-400MI MORRIS DAM AND CAMASERAGA CREEK INFLOW

ISTAG 1COMP IECON IIAPE JPLT JPRT INAME ISTAGE IAU10  
 2 2 0 0 0 0 1 0 0

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 1  
 174. 215. 072. 1817. 2925. 0050. 17964. 43950. 01119. 70946.  
 0312. 45503. 32121. 22048. 10225. 12740. 10334. 8790. 7021. 7127.  
 0574. 6100. 5070. 5290. 4932. 4001. 4292. 4004. 3730. 3400.  
 3252. 3034. 2531. 2042. 2405. 2300. 2140. 2002. 1000. 1743.  
 1020. 1517. 1410. 1321. 1232. 1150. 1073. 1001. 934. 071.

PEAK 0-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 CFS 70940. 67035. 59979. 33034. 515072.  
 CAS 2009. 1890. 1690. 952. 14000.  
 INCHES 0.44 1.50 2.00 3.40  
 MM 11.23 40.20 07.03 86.45  
 AC-FI 33240. 118906. 200134. 255004.  
 INJUS CU M 41001. 140742. 240062. 315530.

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 2  
 394. 377. 1177. 3180. 5110. 0049. 31437. 70912. 110003. 133776.  
 110054. 74389. 40315. 30107. 26918. 21092. 17771. 15243. 13024. 12445.  
 11492. 10070. 9931. 9206. 0031. 0051. 7511. 7007. 0530. 6100.  
 5091. 5310. 4955. 4023. 4313. 4024. 3755. 3504. 3209. 3050.  
 2040. 2055. 2477. 2311. 2157. 2012. 1077. 1752. 1034. 1525.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 CFS 133776. 125219. 109100. 50074. 902775.  
 CAS 3700. 3540. 3092. 1007. 25564.  
 INCHES 0.83 2.40 4.66 5.96  
 MM 20.98 73.19 118.39 151.28  
 AC-FI 02092. 216567. 350320. 447657.  
 INJUS CU M 70590. 267131. 432120. 552177.

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 3  
 434. 530. 1001. 4544. 731. 12041. 44910. 113000. 170933. 194557.  
 150930. 101900. 05504. 47150. 30332. 29970. 24992. 21599. 19305. 17743.  
 10402. 10235. 14104. 13221. 12329. 11501. 10730. 10011. 9340. 8714.  
 0131. 7500. 7070. 0004. 0102. 5749. 5304. 5005. 4070. 4357.  
 4005. 3793. 3539. 3302. 3001. 2975. 2062. 2503. 2335. 2179.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 McFARLAND-JOHNSON ENGINEERS, INC.

CFS	194557.	185745.	156980.	84125.	1289679.
CMS	5509.	5200.	4502.	2382.	36520.
INCHES		1.23	4.20	0.00	8.51
MM		31.13	106.57	109.17	210.12
AC-FI		92105.	315345.	500580.	639510.
THOUS CU M		113010.	386970.	617450.	788624.

SUM OF 2 HYDROGRAPHS AT					2 PLAN 1 RTIO 4				
554.	099.	2105.	5907.	9505.	15433.	58302.	152022.	236583.	255274.
202750.	130208.	82011.	57927.	44711.	37842.	31980.	27854.	25100.	23022.
21303.	19797.	14430.	17185.	18027.	14951.	13948.	13014.	12142.	11329.
10570.	9802.	9202.	8505.	8010.	7474.	6974.	6507.	6071.	5604.
5265.	4931.	4001.	4293.	4005.	3737.	3487.	3253.	3035.	2832.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	255274.	245929.	209032.	109307.	1676583.
CMS	7429.	6904.	5919.	3090.	47476.
INCHES		1.02	5.52	8.66	11.06
MM		41.21	140.11	219.97	280.95
AC-FI		121944.	414609.	650899.	831304.
THOUS CU M		150421.	511412.	802872.	1025472.

SUM OF 2 HYDROGRAPHS AT					2 PLAN 1 RTIO 5				
094.	801.	2509.	7270.	11098.	20225.	71655.	194931.	295940.	317570.
240357.	157121.	90304.	70017.	52001.	45132.	38723.	33994.	30753.	28277.
20193.	24354.	22085.	21149.	19725.	15401.	17107.	16017.	14944.	13943.
13009.	12138.	11325.	10507.	9059.	9199.	8583.	8008.	7472.	6971.
6505.	6009.	5003.	5203.	4930.	4599.	4291.	4004.	3730.	3486.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	317570.	306755.	256973.	134662.	2063487.
CMS	8993.	8000.	7333.	3813.	58431.
INCHES		2.02	6.83	10.66	13.61
MM		51.40	173.59	270.79	345.79
AC-FI		152110.	513660.	801293.	1023217.
THOUS CU M		187625.	633597.	986380.	1262119.

SUM OF 2 HYDROGRAPHS AT					2 PLAN 1 RTIO 6				
863.	1070.	3302.	9087.	14623.	25282.	89819.	252437.	377874.	397232.
306701.	191590.	120523.	80407.	04021.	53055.	46903.	41622.	38155.	35213.
32082.	30410.	28344.	26431.	24654.	23000.	21458.	20021.	18080.	17429.
16261.	15172.	14150.	13200.	12324.	11499.	10729.	10010.	9340.	8714.
6131.	7580.	7078.	6004.	6102.	5749.	5364.	5005.	4670.	4357.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	397232.	387553.	325956.	166400.	2579360.
CMS	11240.	10974.	9230.	4709.	73039.
INCHES		2.56	8.00	13.33	17.02
MM		64.94	210.49	338.03	432.23
AC-FI		192175.	640524.	1002051.	1279021.
THOUS CU M		237044.	797470.	1236012.	1577649.

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## HYDROGRAPH ROUTING

ROUTE COMBINE FLOWS TO AVER GAGE USING MUSKINGUM METHOD

ISIAQ	ICBLC	ICLUV	ITAPE	JPLT	JPRI	INAME	ISTAGE	IAUTO
3	1	0	0	0	0	1	0	0

ROUTING DATA							
GROSS	CLASS	AVG	IRIS	ISAME	IOPT	IPMP	LSIR
0.0	0.000	0.00	0	1	0	0.	0

MSIPS	MSIDL	LAS	AMSKK	A	ISA	STUNA	ISPRAT
2	0	0	7.000	0.040	0.000	0.	0

STATION 3, PLAN 1, RTIO 1

OUTFLOW									
174.	177.	222.	436.	944.	1606.	3915.	10073.	22147.	37449.
50635.	55626.	54439.	46455.	36870.	26120.	21231.	16252.	12799.	10364.
6695.	7812.	7047.	6419.	5919.	5467.	5103.	4752.	4430.	4132.
3654.	3595.	3354.	3130.	2920.	2725.	2542.	2372.	2213.	2065.
1927.	1796.	1677.	1565.	1460.	1362.	1271.	1186.	1107.	1032.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	50620.	55632.	50963.	32791.	513957.
CMS	1509.	1575.	1443.	929.	14554.
INCHES		0.37	1.34	2.00	3.39
MM		9.32	34.16	65.94	86.13
AC-FT		27500.	101063.	195116.	254655.
THOUS Cu ft		34027.	124664.	240675.	314359.

STATION 3, PLAN 1, RTIO 2

OUTFLOW									
304.	309.	369.	762.	1652.	3160.	6852.	17628.	39507.	68669.
93824.	103721.	96225.	79061.	69982.	46063.	34917.	27033.	21576.	17859.
15325.	13547.	12234.	11202.	10343.	9596.	8526.	8315.	7752.	7210.
6744.	6292.	5670.	5477.	5110.	4766.	4449.	4151.	3873.	3613.
3571.	3146.	2955.	2738.	2555.	2364.	2224.	2075.	1936.	1807.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	173721.	99973.	91909.	57443.	899425.
CMS	2937.	2831.	2603.	1627.	25469.
INCHES		0.66	2.43	4.55	5.93
MM		16.75	61.61	115.51	150.72
AC-FT		49573.	182296.	341612.	445996.
THOUS Cu ft		61148.	224862.	421616.	550127.

STATION 3, PLAN 1, RTIO 3

OUTFLOW						
434.	442.	550.	1069.	2360.	4514.	7766.
25429.	58017.	101625.				

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13e391.	150e25.	137e67.	111231.	84394.	83015.	4771e.	37174.	25947.	25014.
21e21.	19210.	17404.	15900.	1757.	13599.	12747.	11077.	11073.	10328.
9e34.	5955.	5355.	7e24.	7390.	5911.	6355.	5930.	5533.	5102.
4e10.	4494.	4195.	3914.	3050.	3400.	3170.	2905.	2700.	2581.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	150220.	144005.	133353.	52119.	1204092.
CAS	4271.	4095.	3770.	2325.	30344.
INCHES		0.95	3.54	0.50	0.40
MM		24.23	89.39	105.13	215.31
AC-FIT		71707.	264501.	404042.	637137.
INDUS CU A		68449.	326258.	602731.	785896.

# STATION 3, PLAN 1, RIID 4

OUTFLOW									
504.	574.	723.	1415.	3009.	5009.	12725.	33509.	77358.	135674.
183405.	198101.	179101.	143330.	107516.	79479.	59937.	40035.	37955.	31902.
27797.	24008.	22539.	20712.	19163.	17796.	10500.	15437.	14394.	13420.
12525.	11085.	10902.	10172.	9490.	8055.	8202.	7708.	7192.	6711.
2201.	5842.	5451.	5060.	4745.	4427.	4131.	3804.	3590.	3355.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	198101.	190753.	175073.	106513.	1070300.
CAS	5010.	5402.	4958.	3025.	47299.
INCHES		1.20	4.52	0.40	11.02
MM		31.97	117.35	214.79	279.91
AC-FIT		94007.	347253.	635501.	620275.
INDUS CU A		110073.	420330.	783978.	1021655.

# STATION 3, PLAN 1, RIID 5

OUTFLOW									
694.	757.	809.	1742.	3777.	7223.	15561.	41770.	97275.	170657.
220994.	245372.	220104.	174907.	130079.	90020.	71909.	50210.	45760.	36739.
33668.	30343.	27540.	25440.	23559.	21593.	20303.	10997.	17714.	10523.
15415.	14381.	13415.	12519.	11050.	10090.	10168.	9407.	8652.	8259.
7700.	7190.	6709.	6259.	5840.	5449.	5084.	4744.	4420.	4130.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	245372.	237103.	210023.	131525.	2055020.
CAS	6940.	6716.	6140.	3724.	56215.
INCHES		1.50	5.72	10.41	13.56
MM		39.75	145.34	204.40	344.50
AC-FIT		117611.	430062.	702030.	1019419.
INDUS CU A		145071.	539474.	965367.	1257434.

# STATION 3, PLAN 1, RIID 6

OUTFLOW									
800.	864.	1112.	2170.	4721.	9029.	19576.	52091.	124369.	217058.
290103.	300510.	274702.	210970.	101371.	110209.	80000.	60302.	55717.	47402.
41707.	37505.	34353.	31690.	29395.	27339.	25405.	23739.	22140.	20553.
19207.	17970.	15772.	15040.	14000.	13023.	12710.	11059.	11005.	10324.
9033.	8958.	8300.	7024.	7300.	6811.	6355.	5930.	5533.	5102.



	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	308511.	299347.	272793.	164539.	2569785.
CMS	6736.	8477.	7722.	4559.	72768.
INCHES	1.97	7.20	13.03	16.95	
MM	50.16	182.79	330.87	430.63	
AC-FT	148136.	540399.	979074.	1274273.	
THOUS CU FT	183093.	667189.	1207669.	1571793.	

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# SUB-AREA RUNOFF COMPUTATION

## LOCAL INFLOW HYDROGRAPH AT AVON GAGE

ISIAO	ICUMI	IECON	ITAPE	JPLT	JPRT	INAME	ISIAGE	IAUTO
3	0	0	0	0	0	1	0	0

## HYDROGRAPH DATA

INHYDS	LONG	AREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	-1	256.00	0.00	256.00	0.00	0.000	0	1	0

## PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	22.00	77.00	87.00	97.00	107.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.887

## LOSS DATA

LROPT	SIRKR	DLTKR	RILOL	ERAIN	STRKS	RILOK	SIRIL	CNSTL	ALSMX	RIIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

GIVEN UNIT GRAPH, NUMBER= 10

1000.	4700.	5100.	3400.	2200.	1500.	900.	500.	200.	100.
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UNIT GRAPH TOTALS 19600. CFS OR 0.71 INCHES OVER THE AREA

## RECESSION DATA

SIRI= -1.00 JRCRN= -0.10 RILOK= 2.00

END-OF-PERIOD FLOW													
MO. DA	HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO. DA	HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.08	0.00	0.08	239.	1.07	12.00	26	0.00	0.00	0.00	3561.
1.01	12.00	2	0.20	0.00	0.20	223.	1.07	18.00	27	0.00	0.00	0.00	3323.
1.01	18.00	3	1.55	0.51	1.04	718.	1.08	0.00	28	0.00	0.00	0.00	3100.
1.02	0.00	4	0.12	0.00	0.12	219.	1.08	6.00	29	0.00	0.00	0.00	2893.
1.02	6.00	5	0.78	0.18	0.60	2	1.08	12.00	30	0.00	0.00	0.00	2699.
1.02	12.00	6	1.95	1.35	0.60	4	1.08	18.00	31	0.00	0.00	0.00	2518.
1.02	18.00	7	15.03	14.43	0.60	7	1.09	0.00	32	0.00	0.00	0.00	2350.
1.03	0.00	8	1.17	0.57	0.60	11	1.09	6.00	33	0.00	0.00	0.00	2192.
1.03	6.00	9	0.00	0.00	0.00	81682.	1.09	12.00	34	0.00	0.00	0.00	2046.
1.03	12.00	10	0.00	0.00	0.00	55613.	1.09	18.00	35	0.00	0.00	0.00	1909.
1.03	18.00	11	0.00	0.00	0.00	36106.	1.10	0.00	36	0.00	0.00	0.00	1781.
1.04	0.00	12	0.00	0.00	0.00	24375.	1.10	6.00	37	0.00	0.00	0.00	1661.
1.04	6.00	13	0.00	0.00	0.00	14662.	1.10	12.00	38	0.00	0.00	0.00	1550.
1.04	12.00	14	0.00	0.00	0.00	8182.	1.10	18.00	39	0.00	0.00	0.00	1446.
1.04	18.00	15	0.00	0.00	0.00	7634.	1.11	0.00	40	0.00	0.00	0.00	1350.
1.05	0.00	16	0.00	0.00	0.00	7123.	1.11	6.00	41	0.00	0.00	0.00	1259.

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1.05	6.00	17	0.00	0.00	0.00	6646.	1.11	12.00	42	0.00	0.00	0.00	1175.
1.05	12.00	18	0.00	0.00	0.00	6201.	1.11	18.00	43	0.00	0.00	0.00	1096.
1.05	18.00	19	0.00	0.00	0.00	5786.	1.12	0.00	44	0.00	0.00	0.00	1023.
1.06	0.00	20	0.00	0.00	0.00	5398.	1.12	6.00	45	0.00	0.00	0.00	954.
1.06	6.00	21	0.00	0.00	0.00	5037.	1.12	12.00	46	0.00	0.00	0.00	890.
1.06	12.00	22	0.00	0.00	0.00	4699.	1.12	18.00	47	0.00	0.00	0.00	831.
1.06	18.00	23	0.00	0.00	0.00	4385.	1.13	0.00	48	0.00	0.00	0.00	775.
1.07	0.00	24	0.00	0.00	0.00	4091.	1.13	6.00	49	0.00	0.00	0.00	723.
1.07	6.00	25	0.00	0.00	0.00	3817.	1.13	12.00	50	0.00	0.00	0.00	675.

SUM 20.89 17.05 3.84 436000.  
( 531.)( 433.)( 98.)(12348.01)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	81682.	79354.	60967.	26933.	435610.
CMS	2319.	2247.	1726.	819.	12335.
INCHES		2.88	8.86	12.62	15.63
MM		73.24	225.08	320.45	402.05
AC-FT		39349.	120927.	172161.	216005.
THOUS CU M		48536.	149161.	212358.	266438.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RRIIO 1

48.	45.	144.	513.	592.	821.	4598.	15365.	16376.	11123.
7221.	4875.	2932.	1636.	1527.	1425.	1329.	1240.	1157.	1080.
1007.	940.	877.	618.	753.	712.	665.	620.	579.	540.
504.	470.	438.	409.	362.	356.	332.	310.	289.	270.
252.	235.	219.	205.	191.	178.	166.	155.	145.	135.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	16376.	15871.	12193.	5787.	87122.
CMS	464.	449.	345.	164.	2467.
INCHES		0.58	1.77	2.52	3.17
MM		14.65	45.02	64.09	80.41
AC-FT		7870.	24185.	34432.	43201.
THOUS CU M		9707.	29832.	42472.	53288.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RRIIO 2

84.	76.	251.	906.	1036.	1436.	8046.	26889.	28659.	19465.
12637.	8531.	5132.	2864.	2672.	2493.	2326.	2170.	2025.	1889.
1763.	1645.	1535.	1432.	1336.	1247.	1163.	1065.	1012.	945.
881.	622.	767.	716.	668.	623.	582.	543.	506.	472.
441.	411.	384.	358.	334.	312.	291.	271.	253.	236.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	28659.	27774.	21339.	10126.	152464.
CMS	812.	786.	604.	287.	4317.
INCHES		1.01	3.10	4.42	5.54
MM		25.63	78.78	112.16	140.72
AC-FT		13772.	42324.	60256.	75602.
THOUS CU M		16988.	52206.	74325.	93253.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RRIIO 3

119.	111.	359.	1294.	1460.	2052.	11495.	38413.	40941.	27806.
18053.	12188.	7331.	4091.	3817.	3561.	3323.	3100.	2893.	2699.
2518.	2350.	2192.	2046.	1909.	1781.	1661.	1550.	1446.	1350.

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1259.	1175.	1090.	1023.	954.	890.	831.	775.	723.	675.
630.	587.	540.	511.	477.	445.	415.	388.	362.	337.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	19941.	39677.	30484.	14400.	217805.
CMS	1159.	1124.	863.	410.	6168.
INCHES		1.44	4.43	0.31	7.91
MM		36.62	112.54	100.22	201.03
AC-FI		19075.	60463.	80061.	108003.
THOUS CU M		24208.	74580.	100179.	133219.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RTIO 4

155.	145.	400.	1083.	1924.	2008.	14943.	49937.	53223.	30148.
23469.	15844.	9531.	5318.	4962.	4030.	4320.	4031.	3701.	3509.
3274.	3055.	2850.	2659.	2461.	2315.	2100.	2015.	1880.	1754.
1037.	1527.	1425.	1330.	1241.	1157.	1080.	1000.	940.	877.
618.	704.	713.	605.	620.	579.	540.	504.	470.	439.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	53223.	51580.	39629.	18606.	283147.
CMS	1507.	1461.	1122.	533.	8018.
INCHES		1.87	5.76	0.20	10.29
MM		47.61	146.30	208.29	261.33
AC-FI		25577.	78602.	111905.	140403.
THOUS CU M		31549.	90955.	138033.	173185.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RTIO 5

191.	178.	574.	2071.	2369.	3283.	18391.	61401.	65505.	44490.
28885.	19500.	11730.	6540.	6107.	5098.	5317.	4901.	4029.	4319.
4029.	3700.	3508.	3273.	3054.	2849.	2050.	2460.	2314.	2159.
2015.	1800.	1754.	1630.	1527.	1425.	1329.	1240.	1157.	1080.
1007.	940.	877.	618.	763.	712.	605.	620.	579.	540.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	65505.	63483.	48774.	23146.	348488.
CMS	1855.	1798.	1381.	055.	9800.
INCHES		2.31	7.09	10.09	12.66
MM		58.59	180.07	256.36	321.64
AC-FI		31479.	90741.	137729.	172804.
THOUS CU M		38829.	119329.	109886.	213151.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RTIO 6

239.	223.	710.	2589.	2961.	4104.	22909.	76820.	81082.	55613.
30100.	24375.	14002.	8102.	7634.	7123.	6646.	6201.	5786.	5398.
5037.	4099.	4305.	4091.	3817.	3561.	3323.	3100.	2893.	2699.
2518.	2350.	2192.	2040.	1909.	1781.	1661.	1550.	1446.	1350.
1259.	1175.	1090.	1023.	954.	890.	831.	775.	723.	675.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	81882.	79354.	60907.	28933.	435611.
CMS	2319.	2247.	1726.	619.	12335.
INCHES		2.88	8.80	12.62	15.83
MM		73.24	225.08	320.45	402.05
AC-FI		39349.	120927.	172101.	210005.
THOUS CU M		48530.	149161.	212434.	266438.

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## COMBINE HYDROGRAPHS

## COMBINE FLOODS AT AVON GAGE

ISTAG	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAVIO
3	2	0	0	0	0	1	0	0

		SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 RTIO 1			
221.	221.	300.	953.	1530.	2027.	8513.	25438.	38523.	48571.
57856.	61701.	57371.	48091.	38397.	29545.	22560.	17492.	13955.	11544.
9902.	8752.	7904.	7237.	6082.	6200.	5767.	5373.	5009.	4671.
4358.	4065.	3793.	3539.	3302.	3081.	2874.	2682.	2502.	2335.
2170.	2032.	1896.	1769.	1651.	1540.	1437.	1341.	1251.	1107.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	61701.	59779.	56315.	38065.	601079.
CMS	1747.	1693.	1595.	1078.	17021.
INCHES		0.33	1.26	2.55	3.30
MM		8.48	31.95	64.78	85.25
AC-FT		29042.	111699.	220502.	298056.
THOUS CU M		36563.	137779.	279380.	367640.

		SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 RTIO 2			
387.	387.	640.	1608.	2689.	4596.	14898.	44517.	68165.	88133.
106401.	112252.	101357.	81925.	63654.	46556.	37243.	29203.	23601.	19748.
17067.	15192.	13709.	12634.	11679.	10842.	10089.	9400.	8704.	8175.
7620.	7114.	6038.	6193.	5778.	5391.	5030.	4693.	4379.	4086.
3612.	3557.	3319.	3090.	2889.	2696.	2515.	2347.	2190.	2043.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	112252.	109357.	101275.	66726.	1051888.
CMS	3179.	3097.	2868.	1889.	29780.
INCHES		0.61	2.26	4.47	5.87
MM		15.51	57.45	113.50	149.18
AC-FT		54226.	200876.	397049.	521597.
THOUS CU M		66887.	247776.	489753.	643381.

		SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 RTIO 3			
553.	553.	915.	2383.	3841.	6566.	21283.	63642.	98958.	129631.
156444.	163014.	144998.	115322.	88211.	66579.	51039.	40275.	32840.	27713.
24139.	21560.	19596.	18011.	16666.	15480.	14409.	13427.	12520.	11677.
10894.	10163.	9482.	8647.	8255.	7702.	7186.	6705.	6256.	5837.
5446.	5081.	4741.	4423.	4127.	3851.	3593.	3352.	3128.	2918.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	163014.	159729.	146733.	95448.	1502697.
CMS	4010.	4523.	4155.	2703.	42552.

McFARLAND-JOHNSON ENGINEERS, INC.

INCHES	0.89	3.29	0.40	0.39
MM	22.65	83.24	102.44	213.12
AC-F1	79204.	291041.	507955.	745139.
THOUS CU M	97097.	350393.	700002.	919115.

SUM OF 2 HYDROGRAPHS AT					3 PLAN 1 R110 4				
719.	719.	1109.	3098.	4993.	8530.	27068.	63440.	130591.	172022.
206074.	213945.	105712.	148050.	112480.	81109.	64257.	50860.	41740.	35470.
31071.	27002.	25309.	23371.	21044.	20113.	10720.	17453.	10274.	15180.
14101.	13212.	12327.	11501.	10731.	10012.	9342.	8716.	8132.	7588.
7080.	0000.	0103.	5750.	5365.	5000.	4071.	4358.	4000.	3794.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	213945.	210409.	192407.	124222.	1953506.
CMS	6050.	5950.	5450.	3518.	55317.
INCHES		1.17	4.30	0.32	10.91
MM		29.04	109.19	211.41	277.05
AC-F1	104335.	381754.	739173.		966081.
THOUS CU M	128690.	470800.	911750.		1194850.

SUM OF 2 HYDROGRAPHS AT					3 PLAN 1 R110 5				
005.	005.	1403.	3813.	6145.	10500.	34052.	103231.	162750.	215148.
257079.	204072.	231034.	101533.	136787.	101720.	77280.	01177.	50408.	43058.
37097.	34103.	31148.	28713.	20613.	24742.	23041.	21477.	20029.	10003.
17429.	15201.	15171.	14155.	13207.	12323.	11497.	10720.	10009.	9339.
8713.	8130.	7505.	7078.	6604.	6101.	5749.	5364.	5005.	4609.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	204072.	201370.	238231.	153040.	2404310.
CMS	7500.	7401.	6740.	4334.	60083.
INCHES		1.40	5.32	10.25	13.42
MM		37.07	135.15	200.46	340.99
AC-F1	129008.	472525.	910053.		1192223.
THOUS CU M	159069.	582851.	1123274.		1470505.

SUM OF 2 HYDROGRAPHS AT					3 PLAN 1 R110 6				
1100.	1107.	1829.	4707.	7002.	13133.	42560.	129717.	206251.	273471.
326289.	332805.	209300.	225100.	169005.	125332.	94700.	74563.	61503.	52801.
40744.	42200.	38737.	35707.	33212.	30900.	28700.	26840.	25033.	23352.
21706.	20320.	18904.	17094.	16509.	15403.	14372.	13409.	12511.	11674.
10092.	10162.	9402.	8047.	8254.	7702.	7100.	6705.	0256.	5837.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	332805.	329507.	299461.	191565.	3005395.
CMS	9426.	9333.	8430.	5425.	85103.
INCHES		1.84	0.09	12.84	16.78
MM		46.74	109.00	320.02	426.24
AC-F1	163432.	593978.	1139090.		1490279.
THOUS CU M	201590.	732660.	1406033.		1838231.



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## HYDROGRAPH ROUTING

## ROUTE FLOWS TO CONFLUENCE OF BLACK CREEK BY LAGGING FLOWS

ISTAW	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUD
4	1	0	0	0	0	1	0	0

ROUTING DATA

WLOSS	CLOSS	AVG	IRIS	ISA4E	IJPT	IPMP	LSTR
0.0	0.000	0.00	0	1	0	0	0

WSIPS	WSIDL	LAG	AMSKK	X	FSK	STOKA	ISPKAT
0	0	1	0.000	0.000	0.000	0.	0

STATION 4, PLAN 1, RTID 1

OUTFLOW									
221.	221.	221.	366.	953.	1536.	2627.	8513.	25438.	38523.
46571.	57856.	61701.	57371.	48091.	38397.	29545.	22500.	17492.	13955.
11544.	9902.	5754.	7904.	7237.	6082.	6200.	5707.	5373.	5009.
4671.	4358.	4065.	3793.	3539.	3302.	3081.	2874.	2682.	2502.
2335.	2178.	2032.	1890.	1769.	1551.	1540.	1437.	1341.	1251.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	61701.	59779.	56315.	38065.	600091.
CMS	1747.	1693.	1595.	1078.	16993.
INCHES		0.33	1.20	2.55	3.35
MM		8.48	31.95	64.78	85.11
AC-FT		29642.	111699.	226502.	297566.
THOUS CU M		30503.	137779.	279390.	307042.

STATION 4, PLAN 1, RTID 2

OUTFLOW									
367.	387.	387.	640.	1668.	2669.	4590.	14898.	44517.	68105.
88133.	106461.	112252.	101357.	81925.	63654.	48556.	37243.	29203.	23601.
19748.	17087.	15192.	13769.	12634.	11579.	10842.	10089.	9400.	8704.
8175.	7026.	7114.	6038.	6193.	5778.	5391.	5030.	4693.	4379.
4086.	3812.	3557.	3319.	3090.	2889.	2696.	2515.	2347.	2190.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	112252.	109357.	101275.	66726.	1050159.
CMS	3179.	3097.	2808.	1889.	29737.
INCHES		0.61	2.20	4.47	5.80
MM		15.51	57.45	113.50	148.94
AC-FT		54226.	200876.	397049.	520740.
THOUS CU M		66887.	247776.	489753.	642323.

STATION 4, PLAN 1, RTID 3

OUTFLOW									
553.	553.	553.	915.	2383.	3641.	6566.	21283.	63842.	98958.
129631.	150444.	163014.	144998.	115322.	88211.	66579.	51039.	40275.	32840.
27713.	24139.	21500.	19590.	18011.	16000.	14800.	14409.	13427.	12520.

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11677. 5637.	10694. 5440.	10103. 5061.	9402. 4741.	8047. 4423.	8255. 4127.	7702. 3551.	7106. 3593.	6705. 3352.	6256. 3128.
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	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	163014.	159729.	146733.	95449.	1500227.
CMS	4010.	4523.	4155.	2703.	42482.
INCHES		0.59	3.28	0.40	8.38
MM		22.05	83.24	102.44	212.77
AC-FT		79204.	291041.	507955.	743914.
THOUS CU Y		97097.	358993.	700502.	917005.

STATION 4, PLAN 1, RILD 4

719. 172022. 35470. 15100. 7588.	719. 206874. 31071. 14101. 7080.	719. 213945. 27002. 13212. 6600.	1109. 186712. 25389. 12327. 0103.	3098. 148050. 23371. 11501. 5750.	4993. 112480. 21644. 10731. 5355.	8530. 84109. 20113. 10012. 5000.	27008. 64257. 18726. 9342. 4071.	83440. 50860. 17453. 6710. 4350.	130591. 41746. 16274. 8132. 4066.
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	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	213945.	210409.	192467.	124222.	1950290.
CMS	6050.	5958.	5450.	3518.	55220.
INCHES		1.17	4.30	0.32	10.89
MM		29.81	109.19	211.41	270.00
AC-FT		104335.	381754.	739173.	967089.
THOUS CU Y		128696.	470866.	911750.	1192886.

STATION 4, PLAN 1, RILD 5

805. 215146. 43050. 16003. 9339.	805. 257079. 37897. 17429. 8713.	805. 204072. 34103. 16201. 8130.	1403. 231834. 31148. 15171. 7505.	3013. 101533. 28713. 14155. 7078.	0145. 136707. 26013. 13207. 0004.	10500. 101720. 24742. 12323. 6161.	34052. 77280. 23041. 11497. 5749.	103231. 01177. 21477. 10720. 5304.	162780. 50408. 20029. 10009. 5005.
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	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	204072.	201376.	238231.	153040.	2400305.
CMS	7500.	7401.	6746.	4334.	67971.
INCHES		1.40	5.32	10.25	13.40
MM		37.07	135.15	260.46	340.43
AC-FT		129608.	472525.	910053.	1190263.
THOUS CU Y		159869.	582851.	1123274.	1468106.

STATION 4, PLAN 1, RILD 6

1100. 273471. 52801. 23352. 11674.	1100. 325289. 46744. 21780. 10892.	1107. 332885. 42260. 29320. 10102.	1629. 209305. 38737. 18964. 9482.	4707. 225100. 35787. 17094. 8847.	7082. 169005. 33212. 10509. 8254.	13133. 125332. 30900. 15403. 7702.	42560. 94700. 28708. 14372. 7186.	129717. 74503. 20840. 13409. 6705.	206251. 61503. 25033. 12511. 6256.
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PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
McFARLAND-JOHNSON ENGINEERS, INC.

CFS	332005.	329587.	299404.	191505.	3000450.
CAS	9420.	9335.	8400.	5425.	84903.
INCHES		1.84	6.09	12.04	10.75
41		40.74	109.30	320.02	425.54
AC-FT		103432.	593970.	1139090.	1487029.
INDUS CU M		201590.	732000.	1400033.	1835210.

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# SUB-AREA RUNOFF COMPUTATION

## HONEYCREEK INFLUX HYDROGRAPH

ISTAU	ICOMP	IECO	ITAPE	JPLT	JFR1	INAME	ISTAGE	IAU1J
4	0	0	0	0	0	1	0	0

## HYDROGRAPH DATA

IMIDS	IUMG	IAKCA	SNAP	IRSDA	IRSPC	KATIO	ISNOX	ISAME	LGCAL
1	-1	200.00	0.00	200.00	0.00	0.000	0	1	0

## PRECIP DATA

SPFE	PMS	K0	K12	K24	K48	K72	K96
0.00	21.50	77.00	37.00	97.00	107.00	0.00	0.00

IRSPC COMPUTED BY THE PROGRAM IS 0.000

## LOSS DATA

LROPT	SLRKR	DLRKR	RIIOL	ERAIN	SIRAS	RIIDK	SIRIL	CNSIL	ALSMX	RTIME
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

## GIVE: UNIT GRAPH, NUNGS= 12

100.	500.	3000.	6300.	5600.	3000.	2400.	1700.	1300.	1000.
700.	400.								

UNIT GRAPH TOTALS 27200. CFS OR 0.97 INCHES OVER THE AREA

## RECESSION DATA

STRJQ= -1.00 JRCSE= -0.10 RIIDK= 2.00

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLD	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.08	0.00	0.08	243.	1.07	12.00	26	0.00	0.00	0.00	5421.
1.01	12.00	2	0.20	0.00	0.20	226.	1.07	18.00	27	0.00	0.00	0.00	5056.
1.01	18.00	3	1.52	0.40	1.04	259.	1.08	0.00	28	0.00	0.00	0.00	4719.
1.02	0.00	4	0.12	0.00	0.12	436.	1.08	6.00	29	0.00	0.00	0.00	4403.
1.02	6.00	5	0.70	0.10	0.60	1919.	1.08	12.00	30	0.00	0.00	0.00	4108.
1.02	12.00	6	1.91	1.31	0.60	3392.	1.08	18.00	31	0.00	0.00	0.00	3833.
1.02	18.00	7	14.70	14.10	0.60	5480.	1.09	0.00	32	0.00	0.00	0.00	3576.
1.03	0.00	8	1.15	0.55	0.60	14711.	1.09	6.00	33	0.00	0.00	0.00	3337.
1.03	6.00	9	0.00	0.00	0.00	61462.	1.09	12.00	34	0.00	0.00	0.00	3113.
1.03	12.00	10	0.00	0.00	0.00	99624.	1.09	18.00	35	0.00	0.00	0.00	2905.
1.03	18.00	11	0.00	0.00	0.00	88216.	1.10	0.00	36	0.00	0.00	0.00	2710.
1.04	0.00	12	0.00	0.00	0.00	57807.	1.10	6.00	37	0.00	0.00	0.00	2529.
1.04	6.00	13	0.00	0.00	0.00	38509.	1.10	12.00	38	0.00	0.00	0.00	2300.
1.04	12.00	14	0.00	0.00	0.00	27425.	1.10	18.00	39	0.00	0.00	0.00	2202.
1.04	18.00	15	0.00	0.00	0.00	20706.	1.11	0.00	40	0.00	0.00	0.00	2054.
1.05	0.00	16	0.00	0.00	0.00	15872.	1.11	6.00	41	0.00	0.00	0.00	1917.
1.05	6.00	17	0.00	0.00	0.00	11010.	1.11	12.00	42	0.00	0.00	0.00	1788.



1.00	12.00	18	0.00	0.00	0.00	7430.	1.11	10.00	43	0.00	0.00	0.00	1068.
1.05	10.00	19	0.00	0.00	0.00	7400.	1.12	0.00	44	0.00	0.00	0.00	1057.
1.06	0.00	20	0.00	0.00	0.00	7410.	1.12	0.00	45	0.00	0.00	0.00	1452.
1.00	0.00	21	0.00	0.00	0.00	7550.	1.12	12.00	46	0.00	0.00	0.00	1355.
1.00	12.00	22	0.00	0.00	0.00	7153.	1.12	10.00	47	0.00	0.00	0.00	1264.
1.00	10.00	23	0.00	0.00	0.00	0074.	1.13	0.00	48	0.00	0.00	0.00	1180.
1.07	0.00	24	0.00	0.00	0.00	6227.	1.13	0.00	49	0.00	0.00	0.00	1101.
1.07	0.00	25	0.00	0.00	0.00	5610.	1.13	12.00	50	0.00	0.00	0.00	1027.
SUM 20.42 10.59 3.83 574150.													
( 519.)( 421.)( 97.)(10250.28)													

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	93924.	93920.	73920.	37079.	573510.
CMS	2021.	2060.	2093.	1007.	10240.
INCHES		3.30	10.53	16.18	20.52
MM		85.35	266.73	410.90	521.19
AC-FI		40572.	146034.	224207.	264389.
INJUS CU A		57440.	180870.	276555.	350789.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 1									
49.	45.	52.	87.	304.	670.	1097.	2942.	12292.	19925.
17043.	11561.	7734.	5485.	4153.	3174.	2203.	1908.	1761.	1643.
1533.	1431.	1335.	1245.	1162.	1004.	1012.	944.	881.	822.
707.	715.	607.	623.	561.	542.	500.	472.	440.	411.
303.	355.	334.	311.	290.	271.	253.	236.	220.	205.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	19925.	18784.	14786.	7530.	114704.
CMS	564.	532.	419.	213.	3240.
INCHES		0.67	2.12	3.24	4.10
MM		17.07	53.75	82.18	104.24
AC-FI		9314.	29327.	44041.	56878.
INJUS CU 4		11489.	36174.	55311.	70150.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 2									
85.	79.	91.	153.	672.	1107.	1920.	5149.	21512.	34868.
30076.	20232.	13534.	9599.	7206.	5555.	3655.	3303.	3082.	2876.
2083.	2503.	2336.	2179.	2033.	1097.	1770.	1052.	1541.	1438.
1342.	1252.	1108.	1090.	1017.	949.	885.	826.	771.	719.
671.	020.	584.	545.	508.	474.	443.	413.	385.	359.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	34000.	32872.	25875.	13108.	200731.
CMS	907.	931.	733.	373.	5604.
INCHES		1.10	3.70	5.66	7.10
MM		29.87	94.06	143.81	182.42
AC-FI		16300.	51322.	78472.	99530.
INJUS CU A		20100.	63305.	96794.	122776.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 3									
121.	113.	129.	210.	959.	1090.	2743.	7355.	30731.	49812.
44108.	20903.	19335.	13713.	10353.	7930.	5505.	4719.	4403.	4108.
3633.	3570.	3337.	3113.	2905.	2710.	2529.	2360.	2202.	2054.
1917.	1708.	1000.	1557.	1452.	1355.	264.	1100.	1101.	1027.

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550. 094. 034. 170. 720. 570. 032. 590. 550. 514.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49012.	40960.	36964.	15540.	280759.
CMS	1411.	1330.	1047.	533.	8120.
INCHES		1.08	5.29	0.09	10.20
MM		42.58	134.37	205.45	260.50
AC-FI		23200.	73317.	112103.	142195.
THOUS CU M		20723.	90435.	130270.	175394.

HYDROGRAPH AT STA 4 FOR PLAN 1, RILL 4

150.	147.	100.	203.	1247.	2205.	3500.	9562.	39950.	64750.
57340.	37574.	25135.	17040.	13498.	10317.	7100.	0135.	5724.	5341.
4903.	4049.	4330.	4047.	3770.	3523.	3280.	3007.	2062.	2670.
2491.	2325.	2109.	2024.	1880.	1702.	1044.	1534.	1431.	1335.
1240.	1102.	1004.	1012.	944.	881.	822.	767.	715.	000.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	04750.	61040.	40053.	24491.	372787.
CMS	1034.	1729.	1301.	094.	10550.
INCHES		2.18	6.58	10.52	13.34
MM		55.48	174.08	267.08	338.78
AC-FI		30272.	95312.	145734.	184953.
THOUS CU M		37340.	117500.	179701.	228013.

HYDROGRAPH AT STA 4 FOR PLAN 1, RILL 5

194.	101.	207.	349.	1535.	2714.	4389.	11709.	49109.	79699.
70573.	40240.	30935.	21940.	16013.	12097.	0013.	7550.	7045.	0573.
0133.	5722.	5339.	4901.	4040.	4337.	4040.	3775.	3522.	3287.
3000.	2001.	2009.	2491.	2324.	2160.	2023.	1800.	1701.	1643.
1533.	1431.	1335.	1245.	1102.	1084.	1012.	944.	881.	822.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	79099.	75130.	59142.	30143.	458015.
CMS	2257.	2120.	1675.	054.	12992.
INCHES		2.09	8.40	12.94	16.42
MM		60.28	214.99	328.72	410.90
AC-FI		37257.	117307.	179360.	227511.
THOUS CU M		45950.	144690.	221244.	280031.

HYDROGRAPH AT STA 4 FOR PLAN 1, RILL 6

243.	220.	259.	430.	1919.	3392.	5400.	14711.	61462.	99624.
88210.	57007.	38009.	27425.	20700.	15072.	11016.	9438.	8806.	8210.
7000.	7153.	0074.	0227.	5010.	5421.	5058.	4719.	4403.	4100.
3833.	3570.	3337.	3113.	2905.	2710.	2529.	2300.	2202.	2054.
1917.	1700.	1000.	1557.	1452.	1355.	1204.	1100.	1101.	1027.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	99024.	93920.	7223.	37679.	573519.
CMS	2021.	2660.	2093.	1007.	16240.
INCHES		3.30	10.50	10.18	20.52
MM		85.35	208.73	410.90	521.19
AC-FI		40572.	140034.	224207.	284389.
THOUS CU M		57440.	180070.	270055.	350709.



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SUB-AREA RUNOFF COMPUTATION

JAFKA CREEK INFLOW HYDROGRAPH

ISFAD 4 ICD 0 IECUN 0 IIAPE 0 JPLF 0 JFHI 0 INAME 1 ISAGE 0 IAUTO 0

IHYOG 1 IUMG -1 IAREA 215.00 SWAP 0.00 TRSDA 0.00 RATIO 0.0000 LSQDA 0 LSAME 1 LOCAL 0

PRECIP DATA  
SPFC 0.00 PMS 21.80 RO 78.00 K12 48.00 K24 98.00 K48 108.00 K72 0.00 R96 0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.884

LOSS DATA

LRUPL 0 SINKR 0.00 OLICK 0.00 RTIUL 1.00 ERAIN 0.00 SIKRS 1.00 RFLUK 1.00 SIRIL 1.00 CNSFL 0.10 ALSMX 0.00 RTIMP 0.00  
100. 400. 1200. 2800. 4200. 3000. 2100. 1500. 1100.  
800. 500.

GIVEY UNIF GRAPH, MUHGO= 12

UNIF GRAPH TOTALS 21900. CFS OR 0.95 INCHES OVER THE AREA

RECESSION DATA

SIRIJS= -1.00 LRCSIR= -0.10 RTIUR= 2.00

END-OF-PERIOD FLOW

WD. DA	HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	WD. DA	HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.08	0.00	0.08	201.	1.07	12.00	26	0.00	0.00	0.00	3999.
1.01	12.00	2	0.20	0.00	0.20	187.	1.07	18.00	27	0.00	0.00	0.00	3731.
1.01	18.00	3	1.53	0.49	1.04	224.	1.08	0.00	28	0.00	0.00	0.00	3481.
1.02	0.00	4	0.12	0.00	0.12	360.	1.08	6.00	29	0.00	0.00	0.00	3218.
1.02	6.00	5	0.77	0.17	0.60	760.	1.08	12.00	30	0.00	0.00	0.00	3031.
1.02	12.00	6	1.93	1.33	0.60	1721.	1.08	18.00	31	0.00	0.00	0.00	2828.
1.02	18.00	7	15.03	14.43	0.60	4379.	1.09	0.00	32	0.00	0.00	0.00	2638.
1.03	0.00	8	1.16	0.56	0.60	10089.	1.09	6.00	33	0.00	0.00	0.00	2462.
1.03	6.00	9	0.00	0.00	0.00	23562.	1.09	12.00	34	0.00	0.00	0.00	2297.
1.03	12.00	10	0.00	0.00	0.00	48500.	1.09	18.00	35	0.00	0.00	0.00	2143.
1.03	18.00	11	0.00	0.00	0.00	69082.	1.10	0.00	36	0.00	0.00	0.00	2000.
1.04	0.00	12	0.00	0.00	0.00	67911.	1.10	6.00	37	0.00	0.00	0.00	1866.
1.04	6.00	13	0.00	0.00	0.00	49116.	1.10	12.00	38	0.00	0.00	0.00	1741.
1.04	12.00	14	0.00	0.00	0.00	31475.	1.11	0.00	39	0.00	0.00	0.00	1624.
1.04	18.00	15	0.00	0.00	0.00	24851.	1.11	6.00	40	0.00	0.00	0.00	1515.
1.05	0.00	16	0.00	0.00	0.00	17924.	1.11	12.00	41	0.00	0.00	0.00	1414.
1.05	6.00	17	0.00	0.00	0.00	12863.	1.11	18.00	42	0.00	0.00	0.00	1319.
1.05	12.00	18	0.00	0.00	0.00	7721.	1.11	0.00	43	0.00	0.00	0.00	1231.
1.05	18.00	19	0.00	0.00	0.00	6497.	1.12	6.00	44	0.00	0.00	0.00	1148.
1.06	0.00	20	0.00	0.00	0.00	6081.	1.12	12.00	45	0.00	0.00	0.00	1072.
1.06	6.00	21	0.00	0.00	0.00	5650.	1.12	18.00	46	0.00	0.00	0.00	1000.
1.06	12.00	22	0.00	0.00	0.00	5277.	1.12	0.00	47	0.00	0.00	0.00	933.
1.06	18.00	23	0.00	0.00	0.00	4923.	1.13	6.00	48	0.00	0.00	0.00	870.
1.07	0.00	24	0.00	0.00	0.00	4594.	1.13	12.00	49	0.00	0.00	0.00	812.

McFARLAND-JOHNSON ENGINEERS, INC.

1.07 0.00 25 0.00 0.00 0.00 4200. 1.13 12.00 50 0.00 0.00 0.00 750.  
 SUM 20.01 10.97 3.63 400004.  
 ( 529.)( 431.)( 97.)(13027.50)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	09002.	08497.	50907.	30935.	459554.
CMS	1950.	1940.	1011.	070.	13014.
INCHES		2.90	9.05	10.00	19.03
MM		75.20	250.15	407.95	505.07
AC-FI	33905.	112073.	184074.	227093.	227093.
INDUS CU 4	41896.	139227.	227051.	201102.	201102.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 1

	40.	37.	40.	72.	152.	344.	070.	2010.	4712.	9700.
13010.	13502.	9829.	0895.	4097.	3535.	2577.	1544.	1299.	1212.	
1131.	1055.	905.	919.	057.	000.	740.	090.	050.	606.	
500.	520.	492.	459.	429.	400.	373.	340.	325.	303.	
263.	204.	240.	230.	214.	200.	187.	174.	102.	152.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	13010.	13099.	11381.	6107.	91917.
CMS	391.	300.	322.	175.	2003.
INCHES		0.59	1.97	3.21	3.90
MM		15.06	50.03	81.59	101.01
AC-FI	0793.	22575.	30015.	45579.	45579.
INDUS CU 4	0379.	27045.	45410.	50220.	50220.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 2

	70.	05.	70.	120.	200.	003.	1533.	3531.	8247.	10975.
24179.	23709.	17201.	12006.	8569.	6213.	4510.	2702.	2274.	2122.	
1979.	1047.	1723.	1600.	1500.	1400.	1300.	1210.	1137.	1061.	
990.	923.	802.	804.	750.	700.	653.	609.	560.	530.	
495.	402.	431.	402.	375.	350.	320.	305.	204.	265.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24179.	23974.	19917.	10027.	160054.
CMS	000.	079.	564.	307.	4550.
INCHES		1.04	3.45	5.02	6.90
MM		26.35	67.55	142.78	176.77
AC-FI	11000.	39500.	64426.	79703.	79703.
INDUS CU 4	14003.	40729.	79400.	90300.	90300.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 3

	100.	94.	112.	180.	300.	051.	2109.	5044.	11701.	24250.
34541.	33956.	24573.	17237.	12242.	8902.	0442.	3801.	3240.	3031.	
2028.	2038.	2402.	2297.	2143.	2000.	1000.	1741.	1024.	1515.	
1414.	1319.	1231.	1140.	1072.	1000.	933.	070.	012.	750.	
707.	060.	010.	574.	530.	500.	400.	435.	400.	379.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	34541.	34240.	26453.	15407.	229792.
CMS	970.	970.	800.	430.	6507.
INCHES		1.40	4.32	8.03	9.94
MM		37.04	125.03	20	252.54

McFARLAND-JOHNSON ENGINEERS, INC.

AC-FI	10983.	56430.	94057.	113947.
INJUS CU A	29940.	59013.	113526.	140051.

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 4									
130.	122.	140.	234.	494.	1119.	2040.	6550.	15315.	31525.
44904.	44142.	31945.	22409.	15914.	11059.	0375.	5019.	4223.	3940.
3070.	3430.	3209.	2900.	2700.	2599.	2425.	2203.	2111.	1970.
1030.	1715.	1000.	1493.	1393.	1300.	1213.	1131.	1050.	985.
919.	857.	800.	740.	670.	650.	600.	500.	523.	492.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	44904.	44523.	30909.	20107.	290730.
CMS	1272.	1261.	1047.	559.	8459.
INCHES		1.93	6.40	10.44	12.93
MM		40.93	102.00	205.17	320.30
AC-FI		22078.	73367.	119640.	140130.
INJUS CU A		27232.	90497.	147503.	182710.

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 5									
100.	150.	179.	200.	609.	1377.	3503.	8071.	19049.	30800.
55200.	54329.	39317.	27000.	19507.	14339.	10300.	6177.	5157.	4049.
4524.	4241.	3939.	3675.	3429.	3199.	2905.	2705.	2599.	2425.
2202.	2111.	1903.	1037.	1714.	1000.	1493.	1393.	1299.	1212.
1131.	1055.	905.	919.	857.	800.	740.	690.	650.	600.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	55200.	54790.	45525.	24748.	367007.
CMS	1505.	1552.	1209.	701.	10411.
INCHES		2.37	7.06	12.05	15.91
MM		60.22	200.12	320.30	404.00
AC-FI		27172.	90290.	147259.	182314.
INJUS CU A		33517.	111381.	101041.	224001.

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 6									
201.	107.	224.	300.	700.	1721.	4379.	10059.	23502.	40500.
09002.	07911.	49140.	34475.	24403.	17924.	12004.	7721.	0497.	0001.
5050.	5277.	4923.	4594.	4200.	3999.	3731.	3481.	3240.	3031.
2020.	2038.	2402.	2297.	2143.	2000.	1000.	1741.	1624.	1515.
1414.	1319.	1231.	1140.	1072.	1000.	933.	870.	812.	750.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	09002.	08497.	50907.	30935.	459504.
CMS	1950.	1940.	1011.	070.	13014.
INCHES		2.90	9.05	10.06	19.88
MM		75.20	250.10	407.95	505.07
AC-FI		33905.	112873.	101074.	227093.
INJUS CU A		41096.	139227.	227051.	201102.

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SUB-AREA RUNOFF COMPUTATION  
McFARLAND-JOHNSON ENGINEERS, INC.



# LOCAL LOSS- HYDROGRAPH

ISTAG 1000P IECOS 11APL JPLT JPRE 1NAGE 1SIAGE 1AUTJ  
4 0 0 0 0 1 0 0

HYDROGRAPH DATA  
1NAGE 1000P 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE  
1 -1 71.00 0.00 71.00 0.00 0.000 0 1 0

PRECIP DATA  
SPPE PKS NO R12 R24 R48 R72 R96  
0.00 21.50 92.00 102.00 113.00 124.00 0.00 0.00

INSPC COMPUTED BY THE PROGRAM IS 0.009

LOSS DATA  
LRCP1 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE 1NAGE  
0 0.00 0.00 1.00 0.00 0.00 1.00 1.00 0.10 0.00 0.00

GIVEN UNIT GRAPH, NUMBER= 4  
400. 2400. 2300. 1200. 700. 400. 200. 100.  
UNIT GRAPH TOTALS 7700. CFS OR 1.01 INCHES OVER THE AREA

RECESSION DATA  
SIRI= -1.50 JNCS= -0.10 RIIOR= 2.00

NO.0A	HR.0A	PERIOD	RAIN	EXCS	LOSS	END-JF-PERIOD FLOA	NO.0A	HR.0A	PERIOD	RAIN	EXCS	LOSS	COMP
1.01	0.00	1	0.00	0.00	0.00	95.	1.07	12.00	26	0.00	0.00	0.00	1726.
1.01	12.00	2	0.10	0.00	0.10	95.	1.07	15.00	27	0.00	0.00	0.00	1510.
1.01	16.00	3	1.00	0.00	1.00	319.	1.08	0.00	28	0.00	0.00	0.00	1533.
1.02	0.00	4	0.12	0.00	0.12	1475.	1.08	6.00	29	0.00	0.00	0.00	1432.
1.02	6.00	5	0.01	0.21	0.00	1497.	1.08	12.00	30	0.00	0.00	0.00	1305.
1.02	12.00	6	1.35	1.25	0.00	1775.	1.08	16.00	31	0.00	0.00	0.00	1221.
1.02	18.00	7	10.90	10.30	0.00	10505.	1.09	0.00	32	0.00	0.00	0.00	1139.
1.03	0.00	8	1.22	0.02	0.00	42964.	1.09	6.00	33	0.00	0.00	0.00	1053.
1.03	6.00	9	0.00	0.00	0.00	40965.	1.09	12.00	34	0.00	0.00	0.00	991.
1.03	12.00	10	0.00	0.00	0.00	22152.	1.09	18.00	35	0.00	0.00	0.00	925.
1.03	18.00	11	0.00	0.00	0.00	12502.	1.10	0.00	36	0.00	0.00	0.00	853.
1.04	0.00	12	0.00	0.00	0.00	7303.	1.10	6.00	37	0.00	0.00	0.00	805.
1.04	6.00	13	0.00	0.00	0.00	4250.	1.10	12.00	38	0.00	0.00	0.00	751.
1.04	12.00	14	0.00	0.00	0.00	3965.	1.10	18.00	39	0.00	0.00	0.00	701.
1.04	18.00	15	0.00	0.00	0.00	3700.	1.11	0.00	40	0.00	0.00	0.00	654.
1.05	0.00	16	0.00	0.00	0.00	3452.	1.11	6.00	41	0.00	0.00	0.00	610.
1.05	6.00	17	0.00	0.00	0.00	3221.	1.11	12.00	42	0.00	0.00	0.00	569.
1.05	12.00	18	0.00	0.00	0.00	3005.	1.11	18.00	43	0.00	0.00	0.00	531.
1.05	18.00	19	0.00	0.00	0.00	2804.	1.12	0.00	44	0.00	0.00	0.00	490.
1.05	0.00	20	0.00	0.00	0.00	2618.	1.12	6.00	45	0.00	0.00	0.00	452.
1.05	6.00	21	0.00	0.00	0.00	2441.	1.12	12.00	46	0.00	0.00	0.00	412.
1.05	12.00	22	0.00	0.00	0.00	2276.	1.12	18.00	47	0.00	0.00	0.00	376.
1.05	18.00	23	0.00	0.00	0.00	2125.	1.13	0.00	48	0.00	0.00	0.00	351.
1.07	0.00	24	0.00	0.00	0.00	1963.	1.13	6.00	49	0.00	0.00	0.00	327.
1.07	6.00	25	0.00	0.00	0.00	1850.	1.13	12.00	50	0.00	0.00	0.00	

SUM 22.69 19.04 3.55 200939.  
( 501.)( 484.)( 98.)( 5009.62)

PEAK 0-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
CFS 42564. 41985. 25444. 3143. 200650.  
CNS 1217. 1189. 834. 5043.

McFARLAND-JOHNSON ENGINEERS, INC.

INCHES	5.50	15.43	20.06	20.29
MM	139.72	391.91	524.04	517.00
AC-FT	20019.	50401.	70203.	99514.
THOUS CU M	25500.	72030.	90403.	122749.

HYDROGRAPH AT STA				4 FOR PLAN 1, RTIO 1						
20.	19.	04.	295.	299.	355.	2101.	8597.	0197.	4430.	
2500.	1461.	850.	793.	740.	090.	644.	001.	501.	523.	
488.	450.	425.	397.	370.	345.	322.	301.	280.	262.	
244.	220.	213.	190.	185.	173.	161.	150.	140.	131.	
122.	114.	100.	99.	92.	86.	81.	75.	70.	65.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	8597.	9397.	5839.	2629.	40137.
CMS	243.	238.	167.	74.	1137.
INCHES		1.10	3.09	4.13	5.25
MM		27.94	78.39	104.97	133.57
AC-FT		4164.	11030.	15041.	19903.
THOUS CU M		5136.	14407.	19293.	24550.

HYDROGRAPH AT STA				4 FOR PLAN 1, RTIO 2						
35.	32.	112.	510.	524.	621.	3677.	1504.	14345.	7753.	
4401.	2550.	1408.	1388.	1295.	1208.	1127.	1052.	981.	910.	
804.	797.	744.	694.	647.	604.	564.	520.	491.	458.	
427.	399.	374.	347.	324.	302.	282.	263.	245.	229.	
214.	199.	180.	173.	162.	151.	141.	131.	123.	114.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	15044.	14095.	10305.	4000.	70240.
CMS	420.	410.	292.	130.	1989.
INCHES		1.93	5.40	7.23	9.20
MM		48.90	137.18	183.69	233.75
AC-FT		7287.	20440.	27371.	34830.
THOUS CU M		6988.	25213.	33762.	42962.

HYDROGRAPH AT STA				4 FOR PLAN 1, RTIO 3						
50.	40.	159.	738.	748.	886.	5252.	21492.	20493.	11076.	
0401.	3652.	2125.	1943.	1850.	1720.	1610.	1503.	1402.	1308.	
1221.	1134.	1063.	991.	925.	863.	805.	751.	701.	654.	
510.	509.	531.	496.	462.	432.	403.	376.	351.	327.	
305.	285.	200.	248.	231.	210.	201.	188.	175.	164.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	21492.	20992.	14722.	6571.	100343.
CMS	609.	594.	417.	166.	2841.
INCHES		2.75	7.72	10.33	13.15
MM		69.86	195.97	262.42	333.93
AC-FT		1009.	29200.	39102.	49757.
THOUS CU M		12840.	36018.	48231.	61374.

HYDROGRAPH AT STA				4 FOR PLAN 1, RTIO 4						
05.	00.	207.	959.	973.	1154.	6820.	27940.	26040.	14399.	
0321.	4747.	703.	2578.	2405.	2244.	2094.	1953.	1823.	1701.	

McFARLAND-JOHNSON ENGINEERS, INC.



1587.	1480.	1381.	1289.	1202.	1122.	1047.	977.	911.	850.
193.	140.	891.	874.	801.	801.	523.	488.	456.	425.
397.	379.	345.	322.	301.	280.	252.	244.	225.	213.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	21940.	21290.	19138.	8543.	130440.
CMS	791.	773.	542.	242.	3694.
INCHES		3.58	15.93	13.43	17.09
MM		90.82	254.75	341.15	434.11
AC-FI		13532.	37900.	50832.	84604.
THOUS CU M		16092.	46823.	62701.	79780.

HYDROGRAPH AT STA 4 FOR PLAN 1, RFI0 5

79.	74.	255.	1180.	1197.	1420.	8404.	34387.	32788.	17722.
10241.	5843.	3400.	3172.	1960.	2702.	2577.	2404.	2243.	2093.
1953.	1822.	1700.	1580.	1480.	1381.	1288.	1202.	1127.	1046.
570.	911.	850.	793.	740.	650.	644.	601.	561.	523.
480.	456.	425.	397.	370.	345.	322.	301.	280.	262.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	3387.	33588.	23555.	10514.	160549.
CMS	974.	951.	687.	298.	4546.
INCHES		4.40	12.34	10.53	21.03
MM		111.78	313.55	419.87	534.29
AC-FI		16055.	46721.	62503.	79611.
THOUS CU M		20544.	57629.	77170.	98199.

HYDROGRAPH AT STA 4 FOR PLAN 1, RFI0 0

99.	93.	319.	1475.	1497.	1776.	10505.	42984.	40985.	22152.
12802.	7303.	4250.	3985.	3700.	3452.	3221.	3005.	2804.	2610.
2441.	2278.	2125.	1983.	1850.	1726.	1610.	1503.	1402.	1308.
1221.	1139.	1003.	991.	925.	863.	805.	751.	701.	654.
610.	569.	531.	490.	462.	432.	403.	376.	351.	327.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	42984.	41985.	29444.	13143.	200680.
CMS	1217.	1189.	834.	372.	5083.
INCHES		5.50	15.43	20.06	26.29
MM		139.72	391.94	524.84	667.80
AC-FI		20819.	58401.	78203.	99514.
THOUS CU M		25680.	72030.	96403.	124748.

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# SUB-AREA RUN-OFF COMPUTATION

## BLACK CREEK INFLOW HYDROGRAPH

ISIAQ	ICOMP	IECON	ITAPE	JPLI	JPKI	INAME	ISTAGE	IAUTJ
4	0	0	0	0	0	1	0	0

## HYDROGRAPH DATA

INIDJ	IUNG	IAREA	SNAP	FRSDA	TRSPC	ISNOH	ISAME	LOCAL

McFARLAND-JOHNSON ENGINEERS, INC.



FRSPC COMPUTED BY THE PROGRAM IS 0.001

PRECIP DATA  
 R12 R24 R48 R72 R96  
 0.00 21.00 81.00 91.00 101.00 112.00 0.00 0.00

LOSS DATA  
 LOSS STRKS RFLUX SIRIL CNSTL ALSMA RIIMP  
 0.00 0.00 1.00 0.00 0.00 1.00 0.10 0.00

GIVEN UNIT GRAPH, NUDGE= 12  
 100. 400. 900. 1300. 1700. 2300. 2800. 3100. 2000. 2000.  
 1400.

UNIT GRAPH TOTALS 19500. CFS OR 0.97 INCHES OVER THE AREA

RECESSION DATA  
 STRJF= -1.00 JRCSEN= -0.10 RIJOR= 2.00

NO. DA	HR. MW	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW	HR. MW	PERIOD	RAIN	EXCS	LOSS	COMP U
U						COMP Q						
1.01	0.00	1	0.08	0.00	0.00	174.	1.07	12.00	20	0.00	0.00	3115.
1.01	12.00	2	0.21	0.00	0.21	163.	1.07	18.00	27	0.00	0.00	2906.
1.01	18.00	3	1.08	0.02	1.06	214.	1.08	0.00	20	0.00	0.00	2711.
1.02	0.00	4	0.12	0.00	0.12	391.	1.08	0.00	29	0.00	0.00	2530.
1.02	0.00	5	0.70	0.10	0.60	709.	1.08	12.00	30	0.00	0.00	2360.
1.02	12.00	6	1.90	1.30	0.60	1127.	1.08	18.00	31	0.00	0.00	2202.
1.02	18.00	7	15.41	14.81	0.60	3321.	1.09	0.00	32	0.00	0.00	2055.
1.03	0.00	8	1.14	0.54	0.60	8901.	1.09	0.00	33	0.00	0.00	1917.
1.03	0.00	9	0.00	0.00	0.00	17359.	1.09	12.00	34	0.00	0.00	1789.
1.03	12.00	10	0.00	0.00	0.00	24353.	1.09	18.00	35	0.00	0.00	1559.
1.03	18.00	11	0.00	0.00	0.00	31040.	1.10	0.00	36	0.00	0.00	1557.
1.04	0.00	12	0.00	0.00	0.00	40405.	1.10	0.00	37	0.00	0.00	1453.
1.04	0.00	13	0.00	0.00	0.00	48177.	1.10	12.00	38	0.00	0.00	1356.
1.04	12.00	14	0.00	0.00	0.00	51779.	1.10	18.00	39	0.00	0.00	1265.
1.04	18.00	15	0.00	0.00	0.00	43090.	1.11	0.00	40	0.00	0.00	1180.
1.05	0.00	16	0.00	0.00	0.00	33065.	1.11	6.00	41	0.00	0.00	1101.
1.05	6.00	17	0.00	0.00	0.00	23052.	1.11	12.00	42	0.00	0.00	1027.
1.05	12.00	18	0.00	0.00	0.00	14144.	1.11	18.00	43	0.00	0.00	959.
1.05	18.00	19	0.00	0.00	0.00	5060.	1.12	0.00	44	0.00	0.00	894.
1.06	0.00	20	0.00	0.00	0.00	4721.	1.12	6.00	45	0.00	0.00	835.
1.06	6.00	21	0.00	0.00	0.00	4405.	1.12	12.00	46	0.00	0.00	779.
1.06	12.00	22	0.00	0.00	0.00	4110.	1.12	18.00	47	0.00	0.00	720.
1.06	18.00	23	0.00	0.00	0.00	3834.	1.13	0.00	48	0.00	0.00	678.
1.07	0.00	24	0.00	0.00	0.00	3578.	1.13	6.00	49	0.00	0.00	632.
1.07	6.00	25	0.00	0.00	0.00	3338.	1.13	12.00	50	0.00	0.00	590.

SUM 21.31 17.44 3.87 408805.  
 ( 541. ) ( 443. ) ( 98. ) ( 11576.07 )

PCAN	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
51778.	49953.	41940.	28297.	408421.
1400.	1415.	1273.	801.	11565.
	2.48	8.94	10.89	20.32
	03.12	227.13	429.05	516.05
	24770.	89137.	108379.	202523.
	30553.	109949.	207692.	249808.

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HYDROGRAPH AT STA 4 FOR PLAN 1, RFIG 1									
35.	33.	43.	70.	142.	225.	004.	1700.	3472.	4871.
6200.	0093.	9025.	10350.	0010.	0013.	4010.	2029.	1012.	944.
681.	022.	707.	710.	000.	023.	581.	542.	500.	472.
940.	411.	303.	308.	334.	311.	291.	271.	253.	230.
220.	205.	192.	179.	107.	150.	145.	136.	120.	115.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	10350.	9991.	8904.	5059.	81684.
CMS	293.	283.	255.	100.	2313.
INCHES		0.50	1.79	3.38	4.00
MM		12.02	45.43	85.81	103.21
AC-FT		4954.	17027.	33070.	40505.
THOUS CU M		0111.	21990.	41530.	49962.

HYDROGRAPH AT STA 4 FOR PLAN 1, RFIG 2									
61.	57.	75.	137.	248.	305.	1162.	3115.	6070.	8524.
10064.	14103.	10845.	18122.	15082.	11573.	8000.	4950.	1771.	1052.
1542.	1438.	1342.	1252.	1108.	1090.	1017.	949.	800.	820.
771.	719.	671.	620.	504.	545.	509.	474.	443.	413.
385.	300.	330.	313.	292.	273.	254.	237.	221.	207.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	10122.	17483.	15729.	9904.	142947.
CMS	513.	495.	445.	250.	4040.
INCHES		0.07	3.13	5.91	7.11
MM		22.09	79.50	150.17	180.02
AC-FT		8009.	31198.	58933.	70883.
THOUS CU M		10094.	38482.	72692.	87433.

HYDROGRAPH AT STA 4 FOR PLAN 1, RFIG 3									
87.	81.	107.	195.	354.	504.	1660.	4450.	8000.	12177.
15520.	20232.	24064.	25889.	21545.	15533.	11520.	7072.	2530.	2360.
2202.	2055.	1917.	1709.	1069.	1557.	1453.	1350.	1265.	1180.
1101.	1027.	959.	894.	835.	779.	720.	670.	032.	590.
551.	514.	479.	447.	417.	389.	363.	339.	310.	295.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	25889.	24976.	22470.	14148.	204211.
CMS	733.	707.	636.	401.	5783.
INCHES		1.24	4.47	8.45	10.10
MM		31.50	113.57	214.52	258.03
AC-FT		12385.	44509.	84189.	101201.
THOUS CU M		15277.	54975.	103846.	124904.

HYDROGRAPH AT STA 4 FOR PLAN 1, RFIG 4									
113.	106.	139.	254.	461.	733.	2159.	5785.	11283.	15830.
20170.	20302.	31203.	33050.	20009.	21492.	14984.	9193.	3289.	3068.
2863.	2071.	2492.	2325.	2170.	2024.	1889.	1762.	1044.	1534.
1431.	1330.	1246.	1103.	1005.	1012.	944.	881.	822.	767.
710.	000.	023.	501.	542.	500.	472.	441.	411.	384.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	33050.	32409.	29211.	10393.	205474.
CMS	953.	919.	827.		7517.

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1-CHES	1.02	5.01	10.98	13.21
44	41.03	147.04	270.50	335.43
AC-FF	16100.	57939.	109440.	131040.
THOUS CU M	19800.	71407.	135000.	102375.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 5

140.	130.	171.	313.	507.	902.	2057.	7120.	13087.	19402.
24032.	32372.	30502.	41422.	34472.	20452.	10441.	11315.	4040.	3777.
3524.	3280.	3000.	2002.	2670.	2492.	2325.	2169.	2024.	1800.
1702.	1044.	1034.	1431.	1335.	1240.	1102.	1005.	1012.	944.
081.	022.	707.	710.	008.	023.	001.	542.	500.	472.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	41422.	39902.	35952.	22030.	320737.
CMS	1173.	1132.	1010.	041.	9252.
1-CHES		1.99	7.15	13.51	10.25
44		50.49	101.71	343.24	412.64
AC-FF		19910.	71310.	134703.	102018.
THOUS CU M		24443.	07900.	100104.	199647.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 0

174.	103.	214.	391.	709.	1127.	3321.	8901.	17359.	24353.
31040.	40405.	40127.	51778.	43090.	33000.	23052.	14144.	5060.	4711.
4405.	4110.	3934.	3578.	3334.	3115.	2900.	2711.	2030.	2300.
2202.	2000.	1917.	1789.	1069.	1057.	1453.	1356.	1265.	1100.
1101.	1027.	959.	894.	835.	779.	720.	079.	632.	590.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	51778.	49953.	44940.	20297.	400421.
CMS	1400.	1415.	1273.	001.	11505.
1-CHES		2.48	8.94	10.09	20.32
44		63.12	227.13	429.05	510.05
AC-FF		24770.	09137.	100379.	202523.
THOUS CU M		30553.	109949.	207092.	249000.

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# COMBINE HYDROGRAPHS

COMBINE FLOWS AT CONFLUENCE OF BLACK CREEK

ISTAO	ICOMP	IECON	ITAPE	JPLI	JPRT	INAME	ISTAGE	IAUTO
4	5	0	0	0	0	1	0	0

SUM OF 5 HYDROGRAPHS AT 4 PLAN 1 RTIO 1

305.	355.	424.	898.	1930.	3140.	7305.	23850.	54112.	77449.
08799.	92553.	89740.	80900.	66499.	52459.	39579.	29421.	22125.	10270.
15577.	13000.	12264.	11100.	10254.	9534.	8801.	8250.	7089.	7170.
0000.	0239.	5321.	0431.	5007.	4720.	4411.	4110.	3040.	3583.
3343.	3119.	2910.	2715.	2534.	2304.	2200.	2050.	1920.	1792.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
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McFARLAND-JOHNSON ENGINEERS, INC.

CFS	92553.	91147.	87557.	59558.	928533.
CAS	2021.	2561.	2480.	1007.	20293.
INCHES		0.35	1.30	2.77	3.00
MM		0.98	34.50	70.39	91.45
AC-FI	45197.	173500.	354397.		400430.
INJUS CU 4	55749.	214230.	437142.		507931.

SUM OF 5 HYDROGRAPHS AT					4 PLAN 1 RTIO 2				
038.	021.	743.	1572.	3378.	5494.	12888.	41737.	94090.	130285.
150532.	107131.	101320.	142532.	114139.	88264.	60116.	49251.	37311.	31160.
20007.	23073.	21337.	19502.	17983.	10070.	15499.	14434.	13454.	12547.
11704.	10919.	10137.	9504.	6800.	8274.	7720.	7203.	6720.	6270.
5050.	5459.	5093.	4752.	4434.	4137.	3000.	3001.	3360.	3135.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	167181.	104250.	150010.	104340.	1624933.
CAS	4734.	4051.	4435.	2955.	40013.
INCHES		0.04	2.43	4.86	0.30
MM		10.18	61.70	123.32	100.04
AC-FI	81440.	310032.	620000.		305752.
INJUS CU 4	100463.	383159.	765826.		993800.

SUM OF 5 HYDROGRAPHS AT					4 PLAN 1 RTIO 3				
912.	860.	1051.	2245.	4825.	7849.	10412.	59025.	135526.	196273.
230201.	243187.	233110.	203019.	101342.	123368.	91600.	08193.	51050.	43647.
37790.	33548.	30338.	27787.	25053.	23790.	22133.	20010.	19219.	17923.
10719.	15598.	14502.	13577.	12666.	11820.	11028.	10290.	9000.	8958.
8358.	7798.	7276.	6789.	6334.	5910.	5514.	5145.	4000.	4479.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	243187.	238149.	220036.	149102.	2321332.
CAS	6860.	6744.	6418.	4224.	05733.
INCHES		0.92	3.52	6.94	9.00
MM		23.40	89.29	170.32	220.63
AC-FI	110090.	449520.	887692.		1151074.
INJUS CU 4	145062.	554482.	1094952.		1419828.

SUM OF 5 HYDROGRAPHS AT					4 PLAN 1 RTIO 4				
1185.	1154.	1300.	2919.	6273.	10204.	23935.	77512.	170035.	257100.
302763.	319040.	305070.	205100.	208482.	153184.	116722.	86557.	05924.	55795.
48579.	43302.	39274.	30037.	33306.	30913.	28762.	20796.	24902.	23299.
21734.	20277.	18910.	17551.	16468.	15305.	14336.	13376.	12481.	11645.
10065.	10137.	9459.	6625.	8234.	7683.	7168.	6688.	0240.	5822.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	319640.	312355.	297153.	194076.	3017733.
CAS	9051.	8845.	8414.	5496.	85453.
INCHES		1.21	4.01	9.03	11.70
MM		30.76	117.07	229.38	297.22
AC-FI	154887.	509395.	1154831.		1496390.
INJUS CU 4	191050.	727007.	1424463.		1045777.



SUM OF 5 HYDROGRAPHS AT 4 PLAN 1 RTIO 5

1459.	1420.	1090.	3093.	7721.	12559.	29459.	95400.	217920.	310453.
370059.	390005.	377020.	325940.	255165.	193037.	141005.	104733.	79709.	07700.
59192.	52951.	48148.	44253.	40940.	38021.	35300.	32973.	30744.	28075.
26749.	24950.	23204.	21724.	20209.	18911.	17045.	16403.	15301.	14332.
13372.	12477.	11041.	10002.	10134.	9450.	0022.	0232.	7000.	7100.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	390008.	380047.	307992.	239014.	371432.
CMS	11232.	10954.	10420.	0700.	105172.
INCHES	1.50	5.71	11.12	14.40	
MM	38.10	144.90	282.49	305.81	
AC-FT	191025.	729902.	1422232.	1041710.	
INDUS CU M	230013.	900321.	1754297.	2271726.	

SUM OF 5 HYDROGRAPHS AT 4 PLAN 1 RTIO 6

1023.	1775.	2122.	4491.	9051.	15690.	36823.	119250.	273005.	400579.
474010.	499775.	473078.	407008.	317200.	239317.	175504.	129014.	97729.	03118.
72903.	65500.	59324.	55113.	51071.	47472.	44206.	41203.	38423.	35840.
33435.	31194.	29104.	27155.	25330.	23039.	22050.	20579.	19201.	17915.
10715.	15590.	14552.	13577.	12608.	11820.	11028.	10290.	9600.	0958.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	499775.	487193.	402852.	299032.	4642605.
CMS	14152.	13790.	13107.	0400.	131400.
INCHES	1.09	7.18	13.91	10.00	
MM	47.98	182.35	353.42	457.20	
AC-FT	241503.	918053.	1779304.	2302148.	
INDUS CU M	297909.	1132402.	2194013.	2039057.	

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# HYDROGRAPH ROUTING

ROUTE COMBINE FLOWS TO COURT STREET DAM OUTLET USING MUSKINGUM METHOD

ISIAQ	ICOMP	IECON	ITAPE	JPLI	JPRI	INAME	ISTAGE	IALTO
5	1	0	0	0	0	1	0	0

ROUTING DATA

JLOSS	CLOSS	AVG	IRIS	ISAME	IOPT	IPHP	LSTR
0.0	0.000	0.00	0	1	0	0	0

MSIPS	MSIDL	LAG	APSRN	X	ISK	STGRN	ISPRAI
1	0	0	6.930	0.010	0.000	0.	0

STATION 5, PLAN 1, RTIO 1

OUTFLOW

305.	302.	375.	547.	1067.	1952.	3930.	10920.	27782.	50739.
70305.	82097.	87050.	80370.	78704.	07120.	53374.	42353.	32310.	24972.
20090.	10770.	14007.	12004.	11553.	10501.	07730.	9022.	0330.	7000.

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1270.	0700.	0529.	0904.	0505.	5139.	4795.	4474.	4174.	3594.
3034.	3390.	3103.	2901.	2754.	2509.	2397.	2237.	2097.	1947.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	87000.	57117.	32871.	58490.	926707.
CMS	2409.	2407.	2347.	1050.	26241.
InCHES		0.34	1.29	2.72	3.59
MM		8.58	32.05	09.13	91.27
AC-FI		43199.	164378.	348040.	459524.
InJUS Cu m		53285.	202757.	429201.	506814.

STATION 5, PLAN 1, RILD 2

OUTFLOW									
030.	033.	002.	956.	1808.	3416.	5878.	19109.	48618.	89010.
124390.	147735.	157820.	154308.	138727.	110075.	92570.	71401.	54398.	42175.
34181.	23702.	24971.	22214.	20112.	18420.	17010.	15774.	14007.	13009.
12732.	11873.	11075.	10332.	9039.	8993.	8391.	7829.	7304.	6815.
0359.	5933.	5530.	5105.	4819.	4492.	4195.	3914.	3652.	3400.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	157820.	150097.	147372.	102512.	1621737.
CMS	4409.	4420.	4187.	2903.	45922.
InCHES		0.61	2.29	4.77	6.29
MM		15.37	58.20	121.10	159.73
AC-FI		77403.	293300.	609957.	804167.
InJUS Cu m		95470.	361780.	752403.	991925.

STATION 5, PLAN 1, RILD 3

OUTFLOW									
912.	905.	940.	1300.	2669.	4500.	9820.	27299.	69527.	127741.
179525.	214220.	225551.	222737.	198001.	164044.	130106.	99740.	75089.	56748.
47021.	40450.	35299.	31522.	28615.	20201.	24267.	22517.	20945.	19510.
18107.	10900.	10021.	14759.	13770.	12047.	11987.	11184.	10435.	9730.
9084.	0470.	7908.	7379.	6884.	6423.	5993.	5592.	5217.	4808.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	226851.	225794.	213710.	140006.	2316767.
CMS	0400.	6394.	6052.	4151.	65004.
InCHES		0.88	3.31	6.82	8.98
MM		22.24	84.20	173.27	228.18
AC-FI		111904.	423902.	872367.	1148010.
InJUS Cu m		130105.	522870.	1070049.	1417036.

STATION 5, PLAN 1, RILD 4

OUTFLOW									
1185.	1170.	1230.	1778.	3409.	6344.	12773.	35489.	90519.	160234.
235330.	281377.	300329.	291358.	258578.	213147.	167380.	127590.	90490.	74851.
01123.	51922.	45480.	40742.	37007.	34067.	31509.	29253.	27219.	25357.
23040.	22047.	20500.	19187.	17901.	16701.	15583.	14539.	13505.	12657.
11809.	11010.	10201.	9592.	8950.	8350.	7791.	7269.	6783.	6328.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
McFARLAND-JOHNSON ENGINEERS, INC.

CFS	300329.	295544.	280005.	190700.	3011790.
CAS	5504.	8377.	7929.	5402.	65285.
INCHES		1.15	4.34	0.00	11.00
MM		29.14	110.31	225.40	290.03
AC-FT		1.0099.	555301.	1135099.	1493454.
INJUS CU 4		180951.	005052.	1400123.	1842140.

STATION 5, PLAN 1, R110 5

1459.	1447.	1513.	2109.	4270.	7807.	15721.	43678.	111500.	200170.
291022.	349125.	372210.	359962.	313220.	201390.	204590.	155307.	117120.	90790.
74212.	03210.	55543.	49005.	45474.	41040.	30730.	35980.	33453.	31203.
29092.	27134.	25512.	23014.	22031.	20555.	19179.	17894.	10090.	15570.
14535.	13501.	12053.	11806.	11015.	10277.	9509.	0947.	6340.	7789.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	372210.	300089.	340557.	234950.	3700820.
CAS	10540.	10306.	9813.	0053.	104960.
INCHES		1.42	5.30	10.93	14.37
MM		36.00	130.53	277.09	365.09
AC-FT		101532.	007300.	1390090.	1038090.
INJUS CU M		223910.	847870.	1724520.	2207250.

STATION 5, PLAN 1, R110 6

1623.	1509.	1592.	2736.	5337.	9709.	19051.	54590.	139650.	250027.
307170.	440027.	400440.	451020.	397700.	325004.	254135.	192473.	144501.	111722.
91301.	77944.	00704.	01902.	50571.	52155.	40335.	44930.	41030.	30991.
30359.	33914.	31030.	29517.	27539.	25094.	23973.	22300.	20070.	19472.
10100.	10952.	15010.	14757.	13709.	12047.	11907.	11104.	10435.	9730.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	400440.	400030.	435040.	294909.	4033535.
CAS	13205.	13027.	12330.	8325.	131207.
INCHES		1.75	0.70	13.60	17.97
MM		45.31	171.03	347.40	450.30
AC-FT		220110.	004091.	1749355.	2297621.
INJUS CU M		201379.	1005041.	2157790.	2834073.

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# SUB-AREA RUNOFF COMPUTATION

LOCAL INFLO- HYDROGRAPH AT OUTLET OF COURT STREET DAM

ISTAG	ICOMP	IECJA	IIAPE	JPLI	JPMT	INAME	ISTAGE	IAUTO
5	0	0	0	0	0	1	0	0

INID0	INHO	INRCA	SNAP	IRSDA	IRSPC	RATIO	ISNDA	ISAME	LOCAL
1	-1	01.00	0.00	61.00	0.00	0	0	1	0

McFARLAND-JOHNSON ENGINEERS, INC.

PRECIP DATA  
 SFRZ PAS NO R12 R24 R48 R72 R96  
 0.00 21.00 99.00 104.00 115.00 120.00 0.00 0.00  
 IPSPC COMPUTED BY THE PROGRAM IS 0.355

LOSS DATA  
 LRJPI SIKRR ULTKM RTIOL ERALR SIKKS RTIOK SIKRL CUSIL ALS4X RTI4P  
 0 0.00 0.00 1.00 0.00 0.00 1.00 1.00 0.10 0.00 0.00

GIVEN UNIT GRAPH, NUNGS= 6  
 1500. 2300. 1100. 600. 400. 200. 100. 100.  
 UNIT GRAPH TOTALS 6900. CFS OR 1.04 INCHES OVER THE AREA

RECESSION DATA  
 SINTW= -2.00 WRCSE= -0.10 RTIOK= 2.00

NO.0A	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW	NO.0A	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP 3
1.01	0.00	1	0.00	0.00	0.00	114.	1.07	12.00	26	0.00	0.00	0.00	1835.
1.01	12.00	2	0.10	0.00	0.10	100.	1.07	18.00	27	0.00	0.00	0.00	1713.
1.01	18.00	3	1.49	0.43	1.00	747.	1.08	0.00	28	0.00	0.00	0.00	1598.
1.02	0.00	4	0.11	0.00	0.11	1303.	1.08	6.00	29	0.00	0.00	0.00	1491.
1.02	6.00	5	0.00	0.20	0.00	985.	1.08	12.00	30	0.00	0.00	0.00	1391.
1.02	12.00	6	1.84	1.24	0.00	2967.	1.08	18.00	31	0.00	0.00	0.00	1298.
1.02	18.00	7	17.20	10.00	0.00	29030.	1.09	0.00	32	0.00	0.00	0.00	1211.
1.03	0.00	8	1.32	0.72	0.00	49404.	1.09	6.00	33	0.00	0.00	0.00	1130.
1.03	6.00	9	0.00	0.00	0.00	21332.	1.09	12.00	34	0.00	0.00	0.00	1054.
1.03	12.00	10	0.00	0.00	0.00	11457.	1.09	18.00	35	0.00	0.00	0.00	984.
1.03	18.00	11	0.00	0.00	0.00	7437.	1.10	0.00	36	0.00	0.00	0.00	918.
1.04	0.00	12	0.00	0.00	0.00	4944.	1.10	6.00	37	0.00	0.00	0.00	856.
1.04	6.00	13	0.00	0.00	0.00	4519.	1.10	12.00	38	0.00	0.00	0.00	799.
1.04	12.00	14	0.00	0.00	0.00	4217.	1.10	18.00	39	0.00	0.00	0.00	745.
1.04	18.00	15	0.00	0.00	0.00	3934.	1.11	0.00	40	0.00	0.00	0.00	696.
1.05	0.00	16	0.00	0.00	0.00	3571.	1.11	6.00	41	0.00	0.00	0.00	649.
1.05	6.00	17	0.00	0.00	0.00	3425.	1.11	12.00	42	0.00	0.00	0.00	605.
1.05	12.00	18	0.00	0.00	0.00	3190.	1.11	18.00	43	0.00	0.00	0.00	565.
1.05	18.00	19	0.00	0.00	0.00	2982.	1.12	0.00	44	0.00	0.00	0.00	527.
1.06	0.00	20	0.00	0.00	0.00	2782.	1.12	6.00	45	0.00	0.00	0.00	492.
1.06	6.00	21	0.00	0.00	0.00	2590.	1.12	12.00	46	0.00	0.00	0.00	459.
1.06	12.00	22	0.00	0.00	0.00	2422.	1.12	18.00	47	0.00	0.00	0.00	428.
1.06	18.00	23	0.00	0.00	0.00	2260.	1.13	0.00	48	0.00	0.00	0.00	399.
1.07	0.00	24	0.00	0.00	0.00	2108.	1.13	6.00	49	0.00	0.00	0.00	373.
1.07	6.00	25	0.00	0.00	0.00	1967.	1.13	12.00	50	0.00	0.00	0.00	348.

SUM 23.10 19.35 3.81 192457.  
 ( 588.)( 492.)( 97.)( 5449.77)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49404.	39251.	26764.	12202.	192225.
C4S	1401.	1111.	755.	346.	5443.
INCHES		5.99	10.33	22.33	29.31
MM		152.04	114.57	567.18	744.57
AC-FT		19403.	33085.	72010.	95318.
INJUS CU M		24004.	65480.	89503.	117573.

HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 1  
 23. 21. 149. 201. 197. 597. 6805. 9893. 4206. 2291.  
 McFARLAND-JOHNSON ENGINEERS, INC.



1707.	909.	904.	043.	707.	730.	005.	039.	090.	556.
019.	404.	404.	424.	343.	307.	343.	320.	290.	273.
200.	242.	220.	211.	197.	109.	171.	100.	144.	139.
130.	121.	113.	105.	90.	72.	00.	00.	70.	70.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	9093.	7050.	5353.	2440.	30445.
CMS	200.	222.	152.	09.	1009.
INCHES		1.20	3.27	4.47	5.00
MM		30.41	82.93	113.44	140.91
AC-FI		3093.	10017.	14522.	19004.
INDUS CU 4		4002.	13090.	17913.	23515.

# HYDROGRAPH AT STA 5 FOR PLAN 1, R110 2

40.	37.	202.	400.	345.	1045.	10163.	17312.	7400.	4010.
2003.	1095.	1502.	1470.	1377.	1285.	1199.	1119.	1044.	974.
909.	040.	791.	730.	009.	042.	599.	559.	522.	487.
404.	424.	395.	309.	344.	321.	300.	200.	201.	243.
227.	212.	190.	184.	172.	101.	150.	140.	130.	122.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	17312.	13730.	9307.	4271.	67279.
CMS	490.	309.	205.	121.	1905.
INCHES		2.09	5.71	7.62	10.20
MM		53.21	145.14	190.51	260.60
AC-FI		6012.	18500.	20413.	33301.
INDUS CU 4		4403.	22918.	31347.	41151.

# HYDROGRAPH AT STA 5 FOR PLAN 1, R110 3

57.	53.	374.	051.	492.	1493.	14519.	24732.	10600.	5720.
3710.	2422.	2200.	2100.	1907.	1835.	1713.	1590.	1491.	1391.
1290.	1211.	1130.	1054.	904.	910.	850.	799.	745.	690.
049.	005.	505.	527.	402.	459.	420.	399.	373.	340.
324.	303.	202.	204.	240.	229.	214.	200.	100.	114.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24732.	19025.	13302.	6101.	90112.
CMS	700.	550.	379.	173.	2742.
INCHES		2.99	8.15	11.17	14.60
MM		70.02	207.34	263.59	372.20
AC-FI		9732.	20543.	30305.	47659.
INDUS CU 4		12004.	32740.	44781.	56787.

# HYDROGRAPH AT STA 5 FOR PLAN 1, R110 4

74.	69.	430.	047.	640.	1941.	18074.	32152.	13800.	7447.
4334.	3140.	2930.	2741.	2557.	2300.	2220.	2077.	1930.	1808.
1007.	1574.	1409.	1370.	1279.	1193.	1113.	1039.	969.	904.
044.	707.	734.	605.	039.	097.	557.	519.	400.	452.
422.	394.	307.	343.	320.	290.	278.	260.	242.	226.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	32152.	25513.	17397.	7932.	124940.
CMS	910.	722.	493.	225.	3538.
INCHES		3.09	10.01	14.51	19.05
MM		98.02	209.54	30	403.97

AC-FI 12051. 34555. 47195. 01957.  
 INJUS CU 4 15005. 42502. 55210. 70422.

HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 5  
 91. 05. 595. 1042. 700. 2359. 23230. 39571. 17050. 9105.  
 5950. 3575. 3010. 337. 3145. 2937. 2740. 2557. 2355. 2220.  
 2077. 1938. 1500. 1087. 1574. 1400. 1370. 1275. 1193. 1113.  
 1030. 909. 74. 843. 707. 734. 005. 039. 596. 550.  
 519. 404. 452. 422. 393. 307. 343. 320. 290. 270.

PEAK 0-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 CFS 39571. 31401. 21411. 9702. 153750.  
 CMO 1121. 889. 000. 270. 4355.  
 INCHES 4.79 13.00 17.00 23.45  
 MM 121.53 331.74 453.75 595.55  
 AC-FI 15571. 42400. 55000. 70254.  
 INJUS CU 4 19200. 52354. 71050. 94050.

HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 0  
 114. 100. 747. 1303. 900. 2907. 29030. 49404. 21332. 11457.  
 7437. 4044. 4519. 4217. 3934. 3071. 3425. 3190. 2902. 2702.  
 2590. 2422. 2200. 2100. 1907. 1035. 1713. 1590. 1491. 1391.  
 1290. 1211. 1130. 1054. 904. 910. 650. 799. 745. 090.  
 049. 000. 005. 027. 492. 459. 420. 399. 373. 348.

PEAK 0-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 CFS 49404. 39251. 20704. 12202. 192225.  
 CMO 1401. 1111. 750. 340. 5443.  
 INCHES 5.99 16.33 22.33 29.31  
 MM 152.04 414.07 507.16 744.57  
 AC-FI 19463. 53085. 70010. 95310.  
 INJUS CU 4 24000. 05400. 09503. 117573.

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# COMBINE HYDROGRAPHS

TOTAL OUTFLOW AT COURT STREET DAM

ISFAM 1ICOMP 1ECON 1IAPE 1JPLI 1JPRT 1NAME 1STAGE 1AOTD  
 5 2 0 0 0 0 1 0 0

SUM OF 2 HYDROGRAPHS AT 5 PLAN 1 RTIO 1  
 307. 303. 520. 000. 1204. 2549. 9738. 20812. 32040. 53030.  
 71852. 03000. 00702. 07219. 79551. 07002. 55059. 42992. 32912. 25578.  
 20015. 17202. 14919. 13220. 11946. 10920. 10079. 9342. 0004. 8006.  
 7030. 7021. 0555. 0115. 5705. 5323. 4900. 4033. 4323. 4034.  
 3703. 3511. 3270. 3057. 2852. 2001. 2403. 2317. 2102. 2017.

PEAK 0-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 CFS 00702. 07991. 03037. 59044. 903102.  
 CMO 2015. 2492. 2374. 1 27330.

McFARLAND-JOHNSON ENGINEERS, INC.

1-CHES	0.33	1.27	2.72	3.05
AV	0.45	32.21	00.97	52.70
AC-FI	43042.	100407.	300000.	470000.
INDUS CU 4	53819.	205119.	437436.	590329.

SUM OF 2 MICROGRAPHS AT				5 PLAN 1 RTIU 2					
074.	070.	924.	1414.	2213.	4401.	17041.	30422.	50004.	93020.
120993.	149431.	159407.	155044.	140104.	117300.	93709.	72579.	55442.	43149.
35009.	29010.	25702.	22952.	20301.	19009.	17009.	10333.	15109.	14147.
13100.	12297.	11470.	10701.	9983.	9314.	8090.	0100.	7500.	7059.
0500.	0145.	5733.	0349.	4991.	4057.	4345.	4054.	3703.	3529.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	159407.	157020.	149559.	104935.	1049010.
CAS	4514.	4463.	4245.	2973.	47020.
INCHES		0.00	2.20	4.70	0.39
AA		15.14	57.46	121.00	102.23
AC-FI		70101.	290043.	024700.	037529.
INDUS CU 4		90411.	305904.	770504.	1033070.

SUM OF 2 MICROGRAPHS AT				5 PLAN 1 RTIU 3					
909.	900.	1329.	2019.	3101.	0373.	24345.	52031.	00193.	133409.
103243.	210041.	231110.	224045.	200509.	100479.	131019.	101330.	77150.	60139.
49119.	41009.	30429.	32577.	29559.	27179.	25123.	23310.	21091.	20205.
10000.	17000.	10300.	15200.	14202.	13300.	12415.	11503.	10000.	10004.
9409.	0713.	0191.	7042.	7130.	0053.	6207.	5792.	5404.	5042.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	231110.	227970.	216120.	150240.	2412000.
CAS	0544.	0450.	0120.	4255.	60325.
INCHES		0.00	3.27	0.41	9.12
AA		21.90	03.03	173.17	231.75
AC-FI		113047.	420079.	094030.	1190409.
INDUS CU 4		139441.	520700.	1102776.	1475023.

SUM OF 2 MICROGRAPHS AT				5 PLAN 1 RTIU 4					
1259.	1245.	1715.	2025.	4109.	0205.	31048.	07040.	104305.	174201.
240104.	204520.	303207.	294099.	201135.	215033.	169000.	129000.	90428.	70009.
02010.	03490.	00949.	42112.	33340.	30200.	32022.	30291.	20100.	20202.
24404.	22334.	21301.	19072.	10540.	17200.	10139.	15050.	14050.	13109.
12231.	14112.	10000.	9935.	9209.	0049.	0070.	7529.	7025.	0554.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	303207.	290083.	203135.	195005.	3136743.
CAS	0500.	0450.	0017.	5539.	00023.
INCHES		1.13	4.20	0.00	11.00
AA		20.09	100.70	225.45	301.20
AC-FI		144107.	561591.	1103929.	1555410.
INDUS CU 4		132000.	092712.	1435005.	1910509.



SUM OF 2 MICROGRAPHS AT					5 PLAN 1 R110 5				
1550.	1554.	2111.	3231.	5055.	15197.	35751.	43250.	12554.	215335.
47572.	553505.	55352.	503330.	321375.	454327.	257539.	157944.	119515.	93015.
70255.	55155.	57551.	51572.	47047.	45315.	40105.	37259.	34551.	32315.
10131.	45192.	25215.	24457.	22515.	21290.	19554.	15533.	17272.	15134.
15054.	14545.	13105.	12227.	11459.	10545.	9932.	9257.	5545.	5557.

	PLAN	0-MOUR	24-MOUR	72-MOUR	TOTAL VOLUME
CFS	375532.	369584.	350410.	241527.	3500505.
C4S	19542.	10455.	5923.	5825.	109320.
INCRES		1.40	5.30	10.94	14.50
AC		35.50	134.53	277.50	370.51
AC-FI		153255.	595029.	1454212.	1914351.
IMJUS CO A		225554.	557305.	1759075.	2351317.

SUM OF 2 MICROGRAPHS AT					5 PLAN 1 R110 6				
1937.	1915.	2539.	4039.	5322.	12745.	43569.	104052.	155991.	275284.
374513.	444570.	472957.	455545.	401721.	329275.	257550.	195555.	147545.	114555.
55595.	55355.	75554.	54011.	54539.	53995.	50547.	45525.	43327.	40353.
37557.	55125.	32755.	55571.	25523.	25512.	24530.	23157.	21515.	20155.
15517.	17557.	15351.	15254.	14251.	13305.	12415.	11553.	10555.	10554.

	PLAN	0-MOUR	24-MOUR	72-MOUR	TOTAL VOLUME
CFS	472957.	454405.	440452.	301715.	4825755.
C4S	15593.	13151.	12473.	5544.	135550.
INCRES		1.75	6.55	13.59	15.25
AC		44.51	157.22	347.75	453.51
AC-FI		230254.	573544.	1755349.	2392939.
IMJUS CO A		284551.	1577524.	2214530.	2951545.

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PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS  
 FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)  
 AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS					
				RATIO 1 0.20	RATIO 2 0.35	RATIO 3 0.50	RATIO 4 0.65	RATIO 5 0.80	RATIO 6 1.00
HYDROGRAPH AT	1	1075.00 ( 2704.24)	1	59802. ( 1093.42)	104654. ( 2963.48)	149506. ( 4233.54)	194356. ( 5503.60)	239210. ( 6773.66)	299012. ( 8467.06)
ROUTED TO	2	1075.00 ( 2784.24)	1	52056. ( 1474.06)	100718. ( 2852.01)	147331. ( 4171.95)	193080. ( 5490.08)	242009. ( 6852.92)	302780. ( 8573.78)
HYDROGRAPH AT	2	335.00 ( 867.65)	1	25575. ( 724.20)	44756. ( 1267.35)	63937. ( 1810.50)	83118. ( 2353.65)	102300. ( 2896.80)	127875. ( 3621.00)
2 COMBINED	2	1410.00 ( 3651.88)	1	70940. ( 2008.90)	133770. ( 3788.10)	194557. ( 5509.23)	255274. ( 7228.54)	317570. ( 8992.57)	397232. ( 11246.34)
ROUTED TO	3	1410.00 ( 3651.88)	1	50826. ( 1009.14)	103721. ( 2937.04)	150826. ( 4270.91)	196101. ( 5609.59)	245372. ( 6948.10)	308510. ( 8730.02)
HYDROGRAPH AT	3	256.00 ( 663.04)	1	10370. ( 463.73)	20659. ( 811.52)	40941. ( 1159.32)	53223. ( 1507.11)	65505. ( 1854.91)	81882. ( 2318.63)
2 COMBINED	3	1666.00 ( 4314.92)	1	61701. ( 1747.18)	112252. ( 3178.62)	163014. ( 4610.03)	213945. ( 6056.24)	264872. ( 7500.34)	332885. ( 9426.20)
ROUTED TO	4	1666.00 ( 4314.92)	1	61701. ( 1747.18)	112252. ( 3178.62)	163014. ( 4610.03)	213945. ( 6056.24)	264872. ( 7500.34)	332885. ( 9426.26)
HYDROGRAPH AT	4	200.00 ( 513.40)	1	19925. ( 564.21)	34868. ( 987.36)	49812. ( 1410.52)	64756. ( 1833.67)	79699. ( 2256.83)	99624. ( 2821.03)
HYDROGRAPH AT	4	215.00 ( 556.85)	1	13810. ( 391.24)	24179. ( 684.67)	34541. ( 978.10)	44904. ( 1271.53)	55206. ( 1564.96)	69082. ( 1956.19)
HYDROGRAPH AT	4	71.00 ( 183.89)	1	8597. ( 243.43)	15044. ( 426.01)	21492. ( 608.59)	27940. ( 791.16)	34387. ( 973.74)	42984. ( 1217.17)
HYDROGRAPH AT	4	187.00 ( 484.33)	1	10350. ( 293.24)	16122. ( 513.16)	25889. ( 733.09)	33656. ( 953.02)	41422. ( 1172.95)	51778. ( 1466.18)
5 COMBINED	4	2399.00 ( 6213.38)	1	92553. ( 2620.82)	167181. ( 4734.04)	243187. ( 6886.29)	319640. ( 9051.19)	396668. ( 11232.37)	499775. ( 14152.06)
ROUTED TO	5	2399.00 ( 6213.38)	1	87058. ( 2467.67)	157826. ( 4409.12)	228851. ( 6480.32)	300329. ( 8504.36)	372216. ( 10539.98)	468448. ( 13204.96)
HYDROGRAPH AT	5	61.00 ( 157.99)	1	9093. ( 280.13)	17312. ( 490.23)	24732. ( 700.33)	32152. ( 910.43)	39571. ( 1120.53)	49464. ( 1400.66)
2 COMBINED	5	2460.00 ( 6371.37)	1	88702. ( 2513.46)	159407. ( 4513.91)	231110. ( 6544.31)	303267. ( 8587.55)	375832. ( 10642.36)	472967. ( 13392.93)

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 FLOOD HYDROGRAPH PACKAGE (HFC-1)  
 DAM SAFETY VERSION JULY 1978  
 LAST MODIFICATION 20 FEB 79  
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GENESEE RIVER BASIN											
HYDROLOGIC-HYDRAULIC ANALYSIS OF SAFETY OF COURT STREET DAM											
RATIOS OF PAF ROUTED THROUGH THE RESERVOIR											
1	A										
2	A										
3	A										
4	B	50	0	0	0	0	0	0	0	0	0
5	B1	5									
6	J	1	0	1							
7	J1	.2	.35	.5	.65	.8	1				
8	K	0	1	0	0	0	1				
9	K1		GENESEE RIVER INFLOW HYDROGRAPH AT MOUNT MORRIS DAM								
10	M	1	-1	1075	0	2400	0	0	1	0	
11	P	0	22	41	55	63	74				
12	I	0	0	0	0	0	0	1	.1	0	0
13	U	14									
14	U1	4900	13400	23000	24900	17000	6400	5000	4300	3400	2700
15	U1	2100	1000	1300	1000						
16	X	-1	-1	2							
17	K	1	2	0	0	0	0	1			
18	K1		ROUTING OF INFLOW HYDROGRAPH USING MODIFIED PULS METHOD								
19	Y	0	0	0	1	1					
20	Y1	1	0	0	0	0	0	4660			
21	Y2	4000	24500	50000	120000	337400	364300	377700	391100	405000	417900
22	Y3	1300	430000	444700	451400						
23	Y3	0	0	0	0	0	41500	76500	126000	162000	247000
24	Y3	18000	359000	402000	447000						
25	K	0	2	0	0	0	0	1	0	0	0
26	K1		CANASERAGA CREEK INFLOW HYDROGRAPH AT JONES BRIDGE GAGE								
27	M	1	-1	335	0	2400	0	0	0	1	0
28	P	0	22	41	55	63	74				
29	I	0	0	0	0	0	0	1	.1	0	0
30	U	11									
31	U1	2500	7000	8200	6000	4000	2800	1900	1300	800	500
32	U1	200									
33	X	-1	-1	2							
34	K	2	2	0	0	0	0	1	0	0	0
35	K1		COMBINE OUTFLOW-MOUNT MORRIS DAM AND CANASERAGA CREEK INFLOW								
36	K	1	3	0	0	0	0	1	0	0	0
37	K1		ROUTE COMBINE FLOWS TO AVON GAGE USING MUSKINGUM METHOD								
38	Y	0	0	0	0	1					
39	Y1	2	0	0	7.06	.04	0	0			
40	K	0	3	0	0	0	0	1	0	0	0
41	K1		LOCAL INFLOW HYDROGRAPH AT AVON GAGE								
42	M	1	-1	250	0	2460	0	0	0	1	0
43	P	0	22	41	55	63	74				
44	I	0	0	0	0	0	0	1	.1	0	0
45	U	10									
46	U1	1000	4700	5100	3400	2200	1500	900	500	200	100
47	X	-1	-1	2							
48	K	2	3	0	0	0	0	1	0	0	0
49	K1		COMBINE FLOWS AT AVON GAGE								
50	K	1	4	0	0	0	0	1			



51	K1	ROUTE FLOWS TO CONFLUENCE OF BLACK CREEK BY LAGGING FLOWS									
52	Y	0	0	0	0	1					
53	Y1	0	0	1	0	0	0	0			
54	K	0	4	0	0	0	0	1	0	0	0
55	K1	HOVEDE CREEK INFLOW HYDROGRAPH									
56	M	1	-1	200	0	2400	0	0	0	1	0
57	P	0	22	41	55	63	74				
58	T	0	0	0	0	0	0	1	.1	0	0
59	U	12									
60	U1	100	500	3000	6300	5000	3000	2400	1700	1300	1000
61	U1	700	400								
62	X	-1	-.1	2							
63	K	0	4	0	0	0	0	1	0	0	0
64	K1	WATNA CREEK INFLOW HYDROGRAPH									
65	M	1	-1	215	0	2400	0	0	0	1	0
66	P	0	22	41	55	63	74				
67	T	0	0	0	0	0	0	1	.1	0	0
68	U	12									
69	U1	100	400	1200	2800	4200	4200	3000	2100	1500	1100
70	U1	800	500								
71	X	-1	-.1	2							
72	K	0	4	0	0	0	0	1	0	0	0
73	K1	LOCAL INFLOW HYDROGRAPH									
74	M	1	-1	71	0	2450	0	0	0	1	0
75	P	0	22	41	55	63	74				
76	T	0	0	0	0	0	0	1	.1	0	0
77	U	8									
78	U1	400	2400	2300	1200	700	400	200	100		
79	X	-1.5	-.1	2							
80	K	0	4	0	0	0	0	1	0	0	0
81	K1	BLACK CREEK INFLOW HYDROGRAPH									
82	M	1	-1	107	0	2460	0	0	0	1	0
83	P	0	22	41	55	63	74				
84	T	0	0	0	0	0	0	1	.1	0	0
85	U	12									
86	U1	100	400	900	1300	1700	2300	2800	3100	2600	2000
87	U1	1400	900								
88	X	-1	-.1	2							
89	K	5	4	0	0	0	0	1	0	0	0
90	K1	COMBINE FLOWS AT CONFLUENCE OF BLACK CREEK									
91	K	1	5	0	0	0	0	1	0	0	0
92	K1	ROUTE COMBINE FLOWS TO COURT STREET DAM OUTLET USING MUSKINGUM METHOD									
93	Y	0	0	0	0	1					
94	Y1	1	0	0	6.93	.01					
95	K	0	5	0	0	0	0	1	0	0	0
96	K1	LOCAL INFLOW HYDROGRAPH AT OUTLET OF COURT STREET DAM									
97	M	1	-1	61	0	2400	0	0	0	1	0
98	P	0	22	41	55	63	74				
99	T	0	0	0	0	0	0	1	.1	0	0
100	U	6									



101	01	1500	2500	1100	600	400	200	100	100		
102	X	-2	-1	2							
103	K	2	5	0	0	0	0	1	0	0	0
104	N1	TOTAL DRAINAGE AT COURT STREET DAM									
105	N	99									





# PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AT	1
ROUTE HYDROGRAPH TO	2
RUNOFF HYDROGRAPH AT	2
COMBINE 2 HYDROGRAPHS AT	2
ROUTE HYDROGRAPH TO	3
RUNOFF HYDROGRAPH AT	3
COMBINE 2 HYDROGRAPHS AT	3
ROUTE HYDROGRAPH TO	4
RUNOFF HYDROGRAPH AT	4
RUNOFF HYDROGRAPH AT	4
RUNOFF HYDROGRAPH AT	4
RUNOFF HYDROGRAPH AT	4
COMBINE 5 HYDROGRAPHS AT	4
ROUTE HYDROGRAPH TO	5
RUNOFF HYDROGRAPH AT	5
COMBINE 2 HYDROGRAPHS AT	5
END OF NETWORK	



\*\*\*\*\*  
 FLOOD HYDROGRAPH PACKAGE (HEC-1)  
 DAM SAFETY VERSION JULY 1978  
 LAST MODIFICATION 26 FEB 79  
 \*\*\*\*\*

TIME OF EXECUTION 20-AUG-80 11:48:11

GENESSEE RIVER BASIN  
 HYDROLOGIC-HYDRAULIC ANALYSIS OF SAFETY OF COURT STREET DAM  
 RATIOS OF PAF ROUTED THROUGH THE RESERVOIR

JOB SPECIFICATION									
NO	HR	MIN	DAY	HR	MIN	SEC	PLT	IPRT	NSAM
50	0	0	0	0	0	0	0	0	0
			JUPER	NAI	LROPT	TRACE			
			5	0	0	0			

MULTI-PLAN ANALYSES TO BE PERFORMED  
 NPPLAN= 1 NRTIO= 5 LRTIO= 1  
 RTIOS= 0.20 0.35 0.50 0.65 0.80 1.00

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SUB-AREA RUNOFF COMPUTATION

GENESSEE RIVER INFLOW HYDROGRAPH AT MOUNT MORRIS DAM

ISTAG	ICOMP	IECUM	ITAPE	JPLT	JPRI	INAME	ISAGE	IAUTO
1	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDG	IUHG	IAREA	SNAP	TRSDA	TRSPC	RATIO	ISNO#	ISAME	LOCAL
1	-1	1075.00	0.00	2400.00	0.00	0.000	0	1	0

PRECIP DATA

SPE	PAS	R12	R24	R48	R72	R96
0.00	22.00	41.00	55.00	63.00	74.00	0.00

IRSPC COMPUTED BY THE PROGRAM IS 0.925

LOSS DATA

LROPI	SIRKR	DLFKR	RIIOL	ERAIN	SIRAS	RTIUK	SIRIL	CHSTL	ALSMX	RYIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

GIVEN UNIT GRAPH, NUHGE= 14

4900.	13400.	23000.	24900.	17000.	8400.	5000.	4300.	3400.	2700.
2100.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.

UNIT GRAPH TOTALS 113600. CFS OR 0.98 INCHES OVER THE AREA

RECESSION DATA

SIRIJS	-1.00	JRCSE	-0.10	RTIUK	2.00
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END-OF-PERIOD FLOW

NO.DA	HR.MN	PERIOD	RAI	EXCS	LOSS	COMP	NO.DA	HR.MN	PERIOD	RAIN	EACS	LOSS	COMP
1.01	6.00	1	0.11	0.00	0.11	1003.	1.07	12.00	26	0.00	0.00	0.00	12005.
1.01	12.00	2	0.30	0.00	0.30	936.	1.07	12.00	27	0.00	0.00	0.00	11017.

McFARLAND-JOHNSON ENGINEERS, INC.

1.01	18.00	3	1.40	0.03	0.03	3747.	1.00	0.00	28	0.00	0.00	0.00	11025.
1.02	0.00	4	0.17	0.00	0.17	9221.	1.00	6.00	29	0.00	0.00	0.00	10207.
1.02	6.00	5	0.00	0.00	0.00	15439.	1.00	12.00	30	0.00	0.00	0.00	9598.
1.02	12.00	6	2.00	2.25	0.00	20026.	1.00	18.00	31	0.00	0.00	0.00	8955.
1.02	18.00	7	4.34	7.74	0.00	60542.	1.00	0.00	32	0.00	0.00	0.00	8350.
1.03	0.00	8	0.90	0.38	0.00	164409.	1.00	6.00	33	0.00	0.00	0.00	7790.
1.03	6.00	9	0.00	0.00	0.00	243980.	1.00	12.00	34	0.00	0.00	0.00	7274.
1.03	12.00	10	0.00	0.00	0.00	243250.	1.00	18.00	35	0.00	0.00	0.00	6787.
1.03	18.00	11	0.00	0.00	0.00	162747.	1.10	0.00	36	0.00	0.00	0.00	6332.
1.04	0.00	12	0.00	0.00	0.00	86380.	1.10	6.00	37	0.00	0.00	0.00	5908.
1.04	6.00	13	0.00	0.00	0.00	58096.	1.10	12.00	38	0.00	0.00	0.00	5513.
1.04	12.00	14	0.00	0.00	0.00	44579.	1.10	18.00	39	0.00	0.00	0.00	5143.
1.04	18.00	15	0.00	0.00	0.00	35305.	1.11	0.00	40	0.00	0.00	0.00	4799.
1.05	0.00	16	0.00	0.00	0.00	27901.	1.11	6.00	41	0.00	0.00	0.00	4478.
1.05	6.00	17	0.00	0.00	0.00	23033.	1.11	12.00	42	0.00	0.00	0.00	4178.
1.05	12.00	18	0.00	0.00	0.00	22051.	1.11	18.00	43	0.00	0.00	0.00	3898.
1.05	18.00	19	0.00	0.00	0.00	20574.	1.12	0.00	44	0.00	0.00	0.00	3037.
1.06	0.00	20	0.00	0.00	0.00	19190.	1.12	6.00	45	0.00	0.00	0.00	3393.
1.06	6.00	21	0.00	0.00	0.00	17911.	1.12	12.00	46	0.00	0.00	0.00	3166.
1.06	12.00	22	0.00	0.00	0.00	16711.	1.12	18.00	47	0.00	0.00	0.00	2954.
1.06	18.00	23	0.00	0.00	0.00	15592.	1.13	0.00	48	0.00	0.00	0.00	2756.
1.07	0.00	24	0.00	0.00	0.00	14548.	1.13	6.00	49	0.00	0.00	0.00	2572.
1.07	6.00	25	0.00	0.00	0.00	13574.	1.13	12.00	50	0.00	0.00	0.00	2400.

SUM 15.05 11.04 4.01 1525298.  
( 382.)( 260.)( 102.)(43191.62)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	243900.	243015.	193043.	99560.	1523596.
CMS	6909.	6096.	5489.	2822.	43143.
InCnES		2.11	6.71	10.35	13.18
MA		53.55	170.42	262.86	334.66
AC-FT		120001.	384482.	593010.	755502.
InOUS Cu M		149005.	474251.	731477.	931090.

# HYDROGRAPH AT STA 1 FOR PLAN 1, R110 1

201.	107.	709.	1644.	3008.	5005.	16108.	32062.	48796.	48650.
32549.	17276.	11019.	8916.	7061.	5592.	4727.	4410.	4115.	3639.
3582.	3312.	3118.	2910.	2715.	2533.	2303.	2205.	2057.	1920.
1791.	1671.	1559.	1455.	1357.	1200.	1102.	1103.	1029.	960.
896.	830.	780.	727.	679.	633.	591.	551.	514.	480.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	40796.	40723.	30769.	19932.	304719.
CMS	1382.	1380.	1098.	564.	8629.
InCnES		0.42	1.34	2.07	2.64
MA		10.71	34.08	52.57	60.96
AC-FT		24160.	70896.	118004.	151100.
InOUS Cu M		29001.	94850.	146295.	186300.

# HYDROGRAPH AT STA 1 FOR PLAN 1, R110 2

351.	320.	1302.	3227.	5404.	9809.	28190.	57543.	85393.	85137.
50902.	50233.	20334.	15003.	12357.	9786.	8272.	7718.	7201.	6719.
6209.	5049.	5457.	5092.	4751.	4433.	4130.	3859.	3000.	3359.
3134.	2924.	2729.	2540.	2375.	2216.	2066.	1929.	1800.	1680.
1507.	1402.	1304.	1213.	1100.	1108.	1034.	965.	900.	840.

McFARLAND-JOHNSON ENGINEERS, INC.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	65393.	65205.	67045.	34001.	533259.
CMS	2418.	2414.	1921.	900.	15100.
INCHES		0.74	2.35	3.02	4.01
MM		18.74	59.05	92.00	117.21
AC-FT		42200.	134509.	207550.	264420.
THOUS CU M		52152.	165908.	250017.	320104.

HYDROGRAPH AT STA 1 FOR PLAN 1, R110 3									
502.	408.	1974.	4011.	7719.	14013.	40271.	82204.	121990.	121025.
81374.	43190.	29048.	22290.	17052.	13980.	11817.	11025.	10287.	9598.
8955.	6350.	7796.	7274.	0707.	0332.	5900.	5513.	5143.	4799.
4478.	4170.	3698.	3037.	3373.	3100.	2954.	2750.	2572.	2400.
2239.	2089.	1949.	1010.	1697.	1503.	1477.	1370.	1200.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	121990.	121807.	96921.	49030.	701798.
CMS	3454.	3449.	2745.	1411.	21572.
INCHES		1.05	3.35	5.17	6.59
MM		26.77	85.21	131.43	167.44
AC-FT		60400.	192241.	296509.	377751.
THOUS CU M		74503.	237125.	305730.	405949.

HYDROGRAPH AT STA 1 FOR PLAN 1, R110 4									
052.	006.	2500.	5994.	10035.	10217.	52352.	100006.	150587.	150112.
105760.	56147.	37703.	28977.	22948.	10174.	15302.	14333.	13373.	12477.
11042.	10862.	10135.	9450.	0823.	0232.	7601.	7106.	6087.	6239.
5021.	5431.	5007.	4728.	4411.	4110.	3040.	3503.	3343.	3119.
2910.	2716.	2534.	2364.	2206.	2050.	1920.	1792.	1672.	1500.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	158507.	158350.	125990.	64779.	990337.
CMS	4491.	4484.	3500.	1934.	28043.
INCHES		1.37	4.30	6.73	6.57
MM		34.80	110.77	170.86	217.67
AC-FT		78520.	249913.	305402.	491076.
THOUS CU M		90854.	308263.	475400.	605734.

HYDROGRAPH AT STA 1 FOR PLAN 1, R110 5									
802.	749.	3150.	7377.	12351.	22421.	64433.	131527.	195104.	194600.
130198.	69104.	40477.	35603.	28244.	22300.	16907.	17640.	10459.	15357.
14329.	13309.	12474.	11036.	10859.	10132.	9453.	8020.	8230.	7078.
7104.	6064.	6237.	5019.	5429.	5006.	4727.	4410.	4115.	3839.
3562.	3342.	3110.	2910.	2715.	2533.	2303.	2205.	2057.	1920.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	195104.	194892.	155074.	79728.	1210677.
CMS	5527.	5519.	4391.	2250.	34515.
INCHES		1.69	5.37	8.28	10.55
MM		42.04	136.34	210.29	267.90
AC-FT		90041.	307565.	474414.	604402.
THOUS CU M		119204.	379401.	505101.	745510.

HYDROGRAPH AT STA 1 FOR PLAN 1, R110 0									
1003.	730.	3947.	9221.	15439.	20020.	60542.	104409.	243900.	243250.
102747.	00300.	09090.	44579.	35305.	27951.	23033.	22051.	20574.	19190.
17911.	15711.	15592.	14548.	13574.	12005.	11017.	11025.	10267.	9598.
0955.	0350.	7790.	7274.	6767.	0352.	5908.	5513.	5143.	4799.
4476.	4175.	3090.	3037.	3393.	3100.	2954.	2750.	2572.	2400.

	FEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	243900.	243015.	193843.	99000.	1523590.
CMS	0909.	6890.	5489.	2022.	43143.
INCHES		2.11	0.71	10.35	13.10
MA		53.55	170.42	202.86	334.88
AC-FT		120901.	304402.	593010.	755502.
THOUS Cu M		139005.	474251.	731477.	931890.

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### HYDROGRAPH ROUTING

#### ROUTING OF INFLOW HYDROGRAPH USING MODIFIED PULS METHOD

ISIAJ	ICOMP	IECON	ITAPE	JPLT	JPRI	IRAME	ISIAJL	IAUTO
2	1	0	0	0	0	1	0	0
ROUTING DATA								
ALJSS	CLJSS	AG	IRIS	ISA4E	IUPT	IPMP	LSIR	
0.0	0.000	0.00	1	1	0	0	0	
MSIPS	MSILL	LAG	AMSKA	X	TSK	STORA	ISPRAT	
1	0	0	0.000	0.000	0.000	4060.	0	

STORAGE	4000.00	22500.00	50000.00	120000.00	337400.00	364300.00	377700.00	391100.00	405000.00	41
	431300.00	436000.00	444700.00	451400.00						
OUTFLOW	0.00	0.00	0.00	0.00	0.00	41500.00	78500.00	120000.00	182000.00	24
	318000.00	359000.00	402000.00	147000.00						

#### STATION 2, PLAN 1, R110 1

OUTFLOW									
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STOR									
4759.	4850.	5098.	5751.	6974.	9129.	14512.	20659.	46909.	71069.
91202.	103555.	110719.	115810.	119772.	122909.	125407.	127732.	129046.	131818.
133058.	135375.	130977.	130471.	139000.	141167.	142381.	143513.	144570.	145556.
146476.	147335.	149130.	148803.	149580.	150231.	150838.	151404.	151932.	152425.
152805.	153315.	153715.	154089.	154437.	154703.	155000.	155349.	155613.	155860.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

McFARLAND-JOHNSON ENGINEERS, INC.

0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

	PEAR	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	0.	0.	0.	0.	0.
C45	0.	0.	0.	0.	0.
INCHES		0.00	0.00	0.00	0.00
M4		0.00	0.00	0.00	0.00
AC-F1		0.	0.	0.	0.
INDUS Cu M		0.	0.	0.	0.

MAXIMUM STORAGE = 155550.

STATION 2, PLAN 1, RILD 2

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

4834.	5002.	5420.	6509.	8709.	12480.	21902.	43158.	78590.	120877.
150108.	177720.	190203.	199173.	200105.	211595.	215072.	220037.	223730.	227187.
230407.	233411.	230214.	230030.	241270.	243547.	245071.	247053.	249503.	251228.
252838.	254341.	255742.	257050.	258270.	259409.	260471.	261402.	262387.	263249.
264054.	264805.	265505.	266100.	266770.	267339.	267870.	268300.	268828.	269260.

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAR	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	0.	0.	0.	0.	0.
C45	0.	0.	0.	0.	0.
INCHES		0.00	0.00	0.00	0.00
M4		0.00	0.00	0.00	0.00
AC-F1		0.	0.	0.	0.
INDUS Cu M		0.	0.	0.	0.

MAXIMUM STORAGE = 209260.

STATION 2, PLAN 1, RILD 3

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4902.	4584.	4282.	3997.	3731.	3461.	3248.	3031.	2826.	2638.
2462.	2297.	2143.	2000.	1806.	1711.	1624.	1515.	1414.	1319.

STOR  
McFARLAND-JOHNSON ENGINEERS, INC.



4909.	5149.	5754.	7387.	10449.	15032.	29291.	59057.	110253.	170054.
221014.	251597.	269505.	262530.	292439.	300202.	390070.	312341.	317025.	322555.
327155.	331447.	335452.	330093.	340449.	341157.	341204.	341174.	340997.	340790.
340578.	340372.	340170.	339991.	339518.	339050.	339505.	339355.	339233.	339110.
339990.	339039.	338759.	338090.	338009.	338520.	338453.	338352.	338317.	338255.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5902.	5892.	5708.	4779.	99549.
CMS	109.	107.	102.	135.	2530.
InCHES		0.05	0.20	0.50	0.77
MM		1.30	5.02	12.60	19.68
AC-FI		2922.	11321.	28435.	44404.
InJUS CU A		3004.	13904.	35074.	54772.

MAXIMUM STORAGE = 341204.

STATION 2, PULP 1, PULP 4

STATION									
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	13337.	24422.	25274.	22000.	19403.	16802.	15206.	13944.
12901.	11909.	11104.	10407.	9700.	9054.	8447.	7801.	7353.	6860.
6401.	5972.	5572.	5199.	4851.	4520.	4223.	3940.	3676.	3430.
3200.	2900.	2700.	2599.	2425.	2203.	2111.	1970.	1832.	1715.

STATION									
4903.	5290.	6003.	8205.	12179.	19164.	36080.	70150.	141970.	220491.
265920.	320009.	340045.	353430.	353783.	352092.	349977.	348343.	347250.	346438.
345703.	345171.	344537.	344140.	343091.	342599.	342075.	342008.	342100.	341047.
341549.	341271.	341012.	340770.	340544.	340334.	340137.	339954.	339733.	339623.
339474.	339330.	339200.	339085.	338972.	338807.	338709.	338677.	338591.	338512.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	25274.	24948.	22183.	16315.	317722.
CMS	710.	704.	628.	402.	8997.
InCHES		0.22	0.77	1.09	2.75
MM		5.40	19.50	43.03	69.63
AC-FI		12321.	44000.	97081.	157548.
InJUS CU A		15198.	54273.	119747.	194332.

MAXIMUM STORAGE = 353783.

McFARLAND-JOHNSON ENGINEERS, INC.



STATION 2, PLAN 1, RIB 5

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14963.	71300.	00332.	44077.	30522.	30501.	24900.	21400.	10937.	17200.
15922.	14770.	13749.	12012.	11947.	11144.	10300.	9099.	9049.	8443.
7070.	7300.	0000.	0000.	0070.	0070.	5197.	4049.	4049.	4222.
3039.	3070.	3427.	3199.	2700.	2700.	2099.	2420.	2404.	2111.

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5030.	5442.	0411.	9023.	13914.	23035.	44009.	92000.	173057.	270290.
347112.	375110.	371124.	305450.	301130.	357050.	353592.	351107.	349070.	345505.
347721.	340777.	340512.	345700.	345144.	344023.	344139.	343007.	343200.	342073.
342500.	342104.	341540.	341540.	341270.	341011.	340709.	340540.	340333.	340136.
339953.	339702.	339020.	339474.	339335.	339205.	339004.	338972.	338800.	338700.

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	5-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	71300.	05949.	50544.	30905.	545094.
CAS	2021.	1000.	1431.	875.	15450.
INCHES		0.57	1.70	3.21	4.72
MM		14.47	44.44	81.51	119.90
AC-FI		32053.	100203.	103900.	270091.
INJUS CU A		40270.	123001.	220037.	333093.

MAXIMUM STORAGE = 375110.

STATION 2, PLAN 1, RIB 0

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150290.	124072.	75997.	55355.	42940.	30224.	30404.	26242.	23514.	21506.
19872.	10400.	17100.	15013.	14933.	13929.	12995.	12124.	11312.	10554.
9047.	9100.	8572.	7990.	7403.	6903.	0497.	0002.	5050.	5277.
4924.	4094.	4200.	3999.	3751.	3432.	3240.	3031.	2020.	2030.

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5157.	5030.	5043.	10114.	10220.	27004.	53922.	114053.	215907.	330707.
390019.	390725.	370793.	309535.	304022.	300800.	357140.	354410.	352042.	351340.
350201.	349302.	345530.	347779.	347079.	346429.	345023.	345259.	344732.	344241.
343703.	343355.	342957.	342505.	342237.	341913.	341011.	341329.	341050.	340821.
340591.	340370.	340170.	339992.	339019.	339657.	339500.	339305.	339213.	339110.

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PEAK 5-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
McFARLAND-JOHNSON ENGINEERS, INC.



CFS 150290. 140401. 90234. 51908. 850124.  
 CMS 4420. 3976. 2725. 1470. 24073.  
 INCHES 1.22 3.33 5.39 7.30  
 MM 30.88 84.01 130.91 186.85  
 AC-FT 09060. 190877. 308672. 421549.  
 FTHUS CUM 85924. 235444. 380908. 519973.

MAXIMUM STORAGE = 390010.

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SUB-AREA RUNOFF COMPUTATION

CANASERAGA CREEK INFLOW HYDROGRAPH AT JONES BRIDGE GAGE

ISIAQ	ICOMP	IECON	ITAPE	JPLI	JPRI	INAME	ISIAQ	IAUTO
2	0	0	0	0	0	1	0	0

INYUG	INMG	INAREA	SNAP	IRSDA	TRSPC	IRATIO	ISNGW	ISAME	LOCAL
1	-1	335.00	0.00	240.00	0.00	0.000	0	1	0

PRECIP DATA

K12 R24 K72 K96  
 55.00 63.00 74.00 0.00

LOSS DATA

STRAK R11JK STRIL CHSTL ALSTMX KTIMP  
 0.00 0.00 1.00 0.10 0.00 0.00

GIVEN UNIT GRAPH, NUMG2= 11  
 8000. 1000. 2800. 1900. 1300. 800. 500.

UNIT GRAPH TOTALS 36000. CFS JK 1.00 INCHES OVER THE AREA

RECESSION DATA

SIRIQ= -1.00 GRCSN= -0.10 K11GR= 2.00

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW	ADJ.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.11	0.00	0.11	313.	1.07	12.00	20	0.00	0.00	0.00	3811.
1.01	12.00	2	0.50	0.00	0.50	292.	1.07	18.00	27	0.00	0.00	0.00	3550.
1.01	18.00	3	1.40	0.63	0.83	1840.	1.08	0.00	28	0.00	0.00	0.00	3318.
1.02	0.00	4	0.17	0.00	0.17	5147.	1.08	6.00	29	0.00	0.00	0.00	3096.
1.02	6.00	5	0.05	0.00	0.05	5508.	1.08	12.00	30	0.00	0.00	0.00	2988.
1.02	12.00	6	2.35	0.00	0.00	10001.	1.08	18.00	31	0.00	0.00	0.00	2695.
1.02	18.00	7	0.34	0.00	0.00	40015.	1.09	0.00	32	0.00	0.00	0.00	2514.
1.03	0.00	8	0.98	0.38	0.60	81997.	1.09	6.00	33	0.00	0.00	0.00	2346.
1.03	6.00	9	0.00	0.00	0.00	81463.	1.09	12.00	34	0.00	0.00	0.00	2189.
1.03	12.00	10	0.00	0.00	0.00	59641.	1.09	18.00	35	0.00	0.00	0.00	2042.
1.03	18.00	11	0.00	0.00	0.00	40288.	1.10	0.00	36	0.00	0.00	0.00	1906.
1.04	0.00	12	0.00	0.00	0.00	27973.	1.10	6.00	37	0.00	0.00	0.00	1778.
1.04	6.00	13	0.00	0.00	0.00	18984.	1.10	12.00	38	0.00	0.00	0.00	1659.
1.04	12.00	14	0.00	0.00	0.00	12727.	1.10	18.00	39	0.00	0.00	0.00	1548.

McFARLAND-JOHNSON ENGINEERS, INC.

TRSPC COMPUTED BY THE PROGRAM IS 0.925

1.04	18.00	15	0.00	0.00	0.00	8169.	1.11	0.00	40	0.00	0.00	0.00	1444.
1.05	0.00	16	0.00	0.00	0.00	7622.	1.11	6.00	41	0.00	0.00	0.00	1347.
1.05	6.00	17	0.00	0.00	0.00	7112.	1.11	12.00	42	0.00	0.00	0.00	1257.
1.05	12.00	18	0.00	0.00	0.00	6635.	1.11	18.00	43	0.00	0.00	0.00	1173.
1.05	18.00	19	0.00	0.00	0.00	6191.	1.12	0.00	44	0.00	0.00	0.00	1094.
1.06	0.00	20	0.00	0.00	0.00	5776.	1.12	6.00	45	0.00	0.00	0.00	1021.
1.06	6.00	21	0.00	0.00	0.00	5390.	1.12	12.00	46	0.00	0.00	0.00	953.
1.06	12.00	22	0.00	0.00	0.00	5029.	1.12	18.00	47	0.00	0.00	0.00	889.
1.06	18.00	23	0.00	0.00	0.00	4692.	1.13	0.00	48	0.00	0.00	0.00	829.
1.07	0.00	24	0.00	0.00	0.00	4378.	1.13	6.00	49	0.00	0.00	0.00	774.
1.07	6.00	25	0.00	0.00	0.00	4085.	1.13	12.00	50	0.00	0.00	0.00	722.

SUM 15.05 11.04 4.01 498095.  
( 382.)( 280.)( 102.)(14104.46)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	81997.	81730.	65810.	32931.	497577.
CMS	2322.	2314.	1864.	932.	14090.
INCHES		2.27	7.31	10.97	13.82
MM		57.64	185.67	278.72	350.95
AC-FT		40527.	130532.	195951.	246732.
THOUS CU 1		49989.	161009.	241702.	304340.

#### HYDROGRAPH AT STA 2 FOR PLAN 1, RIG 1

63.	56.	308.	1029.	1102.	2000.	6003.	16399.	16293.	11928.
8053.	5595.	377.	2545.	1634.	1524.	1422.	1327.	1238.	1155.
1078.	1006.	936.	876.	817.	762.	711.	664.	619.	578.
539.	503.	489.	438.	408.	361.	356.	332.	310.	289.
269.	251.	235.	219.	204.	191.	178.	166.	155.	144.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	16399.	16340.	13162.	6566.	99515.
CMS	464.	463.	373.	186.	2818.
INCHES		0.45	1.46	2.19	2.76
MM		11.53	37.13	55.74	70.19
AC-FT		8105.	26106.	39190.	49346.
THOUS CU M		9998.	32202.	48340.	60868.

#### HYDROGRAPH AT STA 2 FOR PLAN 1, RIG 2

109.	102.	644.	1802.	1928.	3501.	14005.	26699.	28512.	20874.
14093.	9791.	6644.	4455.	2859.	2668.	2469.	2322.	2167.	2022.
1860.	1760.	1642.	1532.	1430.	1334.	1245.	1161.	1083.	1011.
943.	880.	821.	766.	715.	667.	622.	581.	542.	505.
472.	440.	411.	363.	357.	333.	311.	290.	271.	253.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	28699.	28605.	23034.	11526.	174152.
CMS	813.	810.	652.	326.	4931.
INCHES		0.79	2.56	3.84	4.84
MM		20.18	64.98	97.55	122.83
AC-FT		14184.	45686.	68563.	86356.
THOUS CU 1		17496.	56353.	84596.	106519.

#### HYDROGRAPH AT STA 2 FOR PLAN 1, RIG 3

150.	140.	920.	2574.	2754.	5001.	0007.	40998.	46731.	29821.
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McFARLAND-JOHNSON ENGINEERS, INC.

20133.	13957.	9492.	6304.	4005.	3511.	3556.	3310.	3096.	2888.
2695.	2514.	2340.	2189.	2042.	1900.	1770.	1659.	1548.	1444.
1347.	1257.	1173.	1094.	1021.	953.	869.	829.	774.	722.
074.	029.	000.	047.	011.	070.	044.	015.	007.	001.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	40996.	40665.	32905.	16405.	248798.
CMS	1161.	1157.	932.	406.	7045.
INCHES		1.13	3.00	5.49	0.91
MM		28.82	92.83	139.36	175.47
AC-FT		20264.	65200.	97975.	123300.
THOUS CU M		24990.	80505.	120651.	152170.

# HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 4

203.	190.	1190.	3340.	3580.	0001.	26009.	53298.	52951.	38767.
20173.	18182.	12339.	8273.	5310.	4954.	4623.	4313.	4024.	3755.
3503.	3209.	3050.	2840.	2655.	2477.	2311.	2157.	2012.	1877.
1752.	1634.	1525.	1423.	1327.	1239.	1150.	1070.	1006.	939.
870.	817.	702.	711.	004.	019.	578.	539.	503.	409.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	53298.	53124.	42777.	21405.	323425.
CMS	1509.	1504.	1211.	000.	9156.
INCHES		1.48	4.75	7.13	0.98
MM		37.47	120.68	181.17	228.12
AC-FT		20343.	84846.	127300.	100376.
THOUS CU M		32493.	104656.	157100.	197821.

# HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 5

250.	233.	1472.	4118.	4407.	8001.	32012.	05597.	65170.	47713.
32212.	22378.	15107.	10182.	6535.	0098.	5689.	5308.	4953.	4621.
4312.	4023.	3754.	3502.	3268.	3049.	2045.	2654.	2470.	2311.
2156.	2011.	1877.	1751.	1634.	1524.	1422.	1327.	1238.	1155.
1070.	1000.	930.	870.	817.	702.	711.	604.	619.	578.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	65597.	65384.	52048.	26344.	398061.
CMS	1850.	1851.	1491.	746.	11272.
INCHES		1.82	5.85	8.70	11.05
MM		46.12	148.53	222.97	280.76
AC-FT		32422.	104426.	156701.	197386.
THOUS CU M		39992.	128800.	193361.	243472.

# HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 6

313.	292.	1840.	5147.	5508.	10001.	40015.	61997.	81463.	59641.
40266.	27973.	18904.	12727.	8169.	7022.	7112.	6635.	6191.	5776.
5390.	5029.	4692.	4370.	4080.	3611.	3556.	3318.	3096.	2888.
2695.	2514.	2340.	2189.	2042.	1900.	1770.	1659.	1548.	1444.
1347.	1257.	1173.	1094.	1021.	953.	869.	829.	774.	722.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	81997.	81730.	65610.	32931.	497577.
CMS	2322.	2314.	1864.	932.	14090.
INCHES		2.27	7.31	10.97	13.82
MM		57.64	185.67	277.17	350.95

McFARLAND-JOHNSON ENGINEERS, INC.

AC-FI 40527. 130532. 195951. 246732.  
 INDUS CU 4 49989. 161009. 241702. 304340.

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# COMBINE HYDROGRAPHS

COMBINE OJIFLOW-MOUNT MORRIS DAM AND CANASERAGA CREEK INFLOW

ISIAW 1COMP IECOV ITAPE JPLT JPKT INAME ISTAGE IADIO  
 2 2 0 0 0 0 1 0 0

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 1

63.	58.	308.	1029.	1102.	2000.	8003.	16399.	16293.	11928.
8053.	5595.	3797.	2545.	1634.	1524.	1422.	1327.	1238.	1155.
1076.	1006.	938.	876.	817.	762.	711.	664.	619.	578.
539.	503.	469.	436.	406.	381.	356.	332.	310.	289.
269.	251.	235.	219.	204.	191.	178.	166.	155.	144.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	16399.	16346.	13162.	6566.	99515.
CMS	464.	403.	373.	186.	2818.
INCHES		0.11	0.35	0.52	0.66
MM		2.74	8.82	13.24	16.68
AC-FI		8105.	26106.	39190.	49346.
INDUS CU M		9998.	32202.	48340.	60868.

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 2

109.	102.	644.	1802.	1928.	3501.	14005.	28699.	28512.	20874.
14093.	9791.	6044.	4455.	2859.	2668.	2469.	2322.	2167.	2022.
1860.	1760.	1642.	1532.	1430.	1334.	1245.	1161.	1083.	1011.
943.	880.	821.	766.	715.	667.	622.	581.	542.	505.
472.	440.	411.	383.	357.	333.	311.	290.	271.	253.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	28699.	28605.	23034.	11520.	174152.
CMS	813.	810.	652.	326.	4931.
INCHES		0.19	0.61	0.91	1.15
MM		4.79	15.44	23.18	29.18
AC-FI		14184.	45680.	68583.	86350.
INDUS CU M		17496.	56353.	84596.	106519.

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 3

150.	146.	920.	2574.	2754.	5001.	20007.	40998.	40731.	29821.
20133.	13987.	9492.	6364.	4085.	3811.	3556.	3318.	3096.	2888.
2695.	2514.	2346.	4184.	6824.	7671.	7740.	7482.	7097.	6673.
6250.	5842.	5455.	5092.	4752.	4434.	4137.	3800.	3602.	3361.
3136.	2920.	2730.	2547.	2376.	2217.	2069.	1930.	1801.	1680.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 McFARLAND-JOHNSON ENGINEERS, INC.

CFS	40990.	40805.	32905.	16405.	330337.
CAS	1161.	1157.	932.	460.	9501.
INCHES		0.27	0.87	1.30	2.23
MM		6.85	22.06	33.11	56.70
AC-FI		20264.	65200.	97975.	107771.
THOUS CU M		24995.	80505.	120051.	206942.

SUM OF 2 HYDROGRAPHS AT					2 PLAN 1 RTIO 4				
203.	190.	1190.	3340.	3580.	6501.	20009.	53296.	52951.	38767.
20173.	18182.	25677.	32695.	30584.	27021.	24025.	21195.	19250.	17699.
10405.	15257.	14214.	13252.	12301.	11531.	10758.	10037.	9365.	8737.
8152.	7500.	7097.	6622.	6176.	5705.	5379.	5018.	4082.	4369.
4070.	3503.	3500.	3311.	3089.	2002.	2069.	2509.	2341.	2184.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	53296.	53124.	42777.	31149.	641147.
CAS	1509.	1504.	1211.	882.	18155.
INCHES		0.35	1.13	2.47	4.23
MM		8.90	28.07	62.64	107.44
AC-FI		20343.	64040.	185349.	317924.
THOUS CU M		32493.	104050.	220024.	392153.

SUM OF 2 HYDROGRAPHS AT					2 PLAN 1 RTIO 5				
250.	233.	1472.	4118.	4407.	8001.	32012.	65597.	65170.	47713.
47195.	93745.	75519.	54058.	43158.	30458.	30070.	20578.	23887.	21881.
20234.	18798.	17503.	10314.	15215.	14193.	13241.	12353.	11520.	10754.
10034.	9302.	6735.	8150.	7604.	7095.	6020.	6176.	5703.	5377.
5017.	4051.	4307.	4075.	3802.	3547.	3310.	3090.	2881.	2088.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	93745.	84632.	67325.	51218.	943955.
CAS	2055.	2397.	1900.	1450.	26730.
INCHES		0.50	1.78	4.05	6.23
MM		14.10	45.13	102.99	158.18
AC-FI		41900.	133537.	304705.	468077.
THOUS CU M		51705.	164715.	375923.	577364.

SUM OF 2 HYDROGRAPHS AT					2 PLAN 1 RTIO 6				
313.	292.	1040.	5147.	5508.	10001.	40015.	81997.	81463.	59641.
190555.	152045.	94980.	68682.	51109.	43840.	37566.	32877.	29705.	27282.
25262.	23484.	21072.	20390.	19017.	17740.	16551.	15442.	14407.	13442.
12542.	11702.	10910.	10107.	9505.	8809.	8275.	7721.	7203.	6721.
0271.	5051.	5459.	5094.	4753.	4434.	4137.	3860.	3002.	3361.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	196555.	174600.	127080.	78018.	1347701.
CAS	5500.	4944.	3599.	2209.	38103.
INCHES		1.15	3.35	6.18	6.89
MM		29.26	85.18	150.89	225.84
AC-FI		86579.	252070.	404242.	660281.
THOUS CU M		100793.	310924.	572033.	824313.



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## HYDRJGRAPH ROUTING

ROUTE COMBINE FLOWS TO AVON GAGE USING MUSKINGUM METHOD

ISFAM	ICOMP	IECON	ITAPE	JPLI	JPKT	INAME	ISIAGE	IAUTO
3	1	0	0	0	0	1	0	0

ROUTING DATA							
JLOSS	CLOSS	AVG	IRES	ISA4E	ISPT	IPAP	LSIK
0.0	0.000	0.00	0	1	0	0	0

WSIPS	WSIDL	LAS	AMSKN	X	TSK	STORA	ISPRAT
2	0	0	7.000	0.040	0.000	0.	0

STATION 3, PLAN 1, R110 1

OUTFLOW									
63.	62.	85.	211.	469.	807.	1669.	4155.	8182.	11512.
12359.	11110.	8985.	6820.	4958.	3522.	2500.	1992.	1001.	1456.
1315.	1206.	1119.	1040.	909.	904.	843.	780.	734.	684.
639.	596.	550.	519.	484.	452.	421.	393.	367.	342.
319.	298.	270.	259.	242.	226.	211.	197.	183.	171.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	12359.	11935.	10891.	6485.	99277.
CMS	350.	338.	308.	184.	2011.
INCHES		0.08	0.29	0.51	0.05
MM		2.00	7.30	13.04	16.64
AC-FT		5918.	21603.	38590.	49228.
INJUS CU M		7300.	26640.	47000.	60722.

STATION 3, PLAN 1, R110 2

OUTFLOW									
109.	109.	149.	370.	821.	1413.	2921.	7272.	14319.	20147.
21627.	19443.	15724.	11935.	8676.	6164.	4480.	3486.	2907.	2548.
2302.	2114.	1950.	1821.	1096.	1581.	1475.	1376.	1284.	1198.
1117.	1043.	973.	908.	847.	790.	737.	688.	642.	599.
559.	521.	460.	454.	423.	395.	369.	344.	321.	299.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	21627.	20887.	19060.	11349.	173736.
CMS	612.	591.	540.	321.	4920.
INCHES		0.14	0.50	0.90	1.15
MM		3.50	12.78	22.62	29.11
AC-FT		10357.	37804.	67532.	86150.
INJUS CU M		12775.	46631.	83299.	106204.

STATION 3, PLAN 1, R110 3

OUTFLOW							
156.	155.	213.	528.	1173.	2016.	4173.	10388.
							20456.
							28781.

McFARLAND-JOHNSON ENGINEERS, INC.

30590.	27770.	22403.	17050.	12395.	4605.	6401.	4961.	4152.	3040.
3209.	3020.	2157.	2155.	3284.	4454.	5157.	6609.	7111.	7182.
7010.	0719.	0300.	5981.	5004.	5211.	4890.	4571.	4200.	3961.
3714.	3400.	3254.	3017.	2015.	2027.	2451.	2207.	2134.	1991.

	PLAN	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	30890.	29839.	27228.	10213.	334220.
CAS	875.	845.	771.	459.	9404.
INCHES		0.20	0.72	1.28	2.21
AM		5.00	18.25	32.60	56.01
AC-FT		14796.	54000.	90474.	105732.
INJUS CU M		18251.	66010.	118999.	204427.

# STATION 3, PLAN 1, R110 4

OUTFLOW									
203.	202.	271.	067.	1525.	2023.	5425.	13504.	26593.	37415.
40105.	30109.	30232.	21337.	27909.	29057.	28135.	27100.	24799.	22402.
20392.	18039.	17152.	15807.	14730.	13705.	12767.	11902.	11100.	10354.
9659.	9012.	6400.	7845.	7320.	6829.	6372.	5945.	5547.	5170.
4029.	4500.	4204.	3922.	3060.	3415.	3100.	2973.	2774.	2586.

	PLAN	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	40105.	38790.	35525.	29573.	635001.
CAS	1137.	1098.	1000.	637.	18004.
INCHES		0.26	0.94	2.34	4.19
AM		0.50	23.81	59.47	106.54
AC-FT		19235.	70404.	175970.	315275.
INJUS CU M		23726.	66910.	217055.	366884.

# STATION 3, PLAN 1, R110 5

OUTFLOW									
250.	249.	340.	845.	1877.	3229.	6677.	10021.	32730.	46050.
50592.	53045.	02547.	09218.	00231.	57090.	48888.	41019.	34060.	29802.
20193.	23465.	21370.	19050.	18191.	10890.	15727.	14055.	13064.	12745.
11009.	11092.	10349.	9056.	9009.	8405.	7843.	7317.	6827.	6370.
5944.	5540.	5174.	4820.	4504.	4203.	3921.	3659.	3414.	3185.

	PLAN	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	09218.	67725.	63442.	49108.	937370.
CAS	1900.	1910.	1795.	1392.	26544.
INCHES		0.45	1.07	3.89	6.18
AM		11.35	42.52	98.87	157.08
AC-FT		33503.	125035.	292508.	464015.
INJUS CU M		41423.	155216.	360877.	573340.

# STATION 3, PLAN 1, R110 6

OUTFLOW									
313.	311.	425.	1050.	2346.	4036.	8347.	20770.	40912.	57502.
74000.	103078.	127001.	122938.	103498.	82288.	64979.	52416.	43468.	37120.
34585.	29241.	20050.	24531.	22710.	21109.	19652.	16315.	17079.	15930.
14001.	13005.	12430.	12009.	11201.	10507.	9803.	9147.	8534.	7903.
7429.	0932.	0400.	0035.	5630.	5253.	4902.	4573.	4267.	3981.

McFARLAND-JOHNSON ENGINEERS, INC.

CFS 127001. PEAR 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
 CFS 3598. 125000. 111620. 75409. 1339477.  
 INCHES 3161. 2137. 37930.  
 INCHES 0.82 2.95 5.91 8.84  
 MM 151.71 224.40  
 AC-FT 61963. 221395. 449071. 664203.  
 INJUS CU M 76455. 273087. 553921. 819283.

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SUB-AREA RUNOFF COMPUTATION

LOCAL INFLOW HYDROGRAPH AT AWDN GAGE  
 ISTAT 3 ICOMP 0 IECUN 0 IIAPE 0 JPLF 0 JPRT 0 INAME 1 ISTAGE 0 IAUTO 0

HYDROGRAPH DATA  
 INJUS 1 IUMG 1AREM SNAP IIRSDA IIRSPC RATIO ISNUM ISAME LUCAN  
 1 -1 250.00 0.00 240.00 0.00 0.00 0.00 0

PRECIP DATA  
 SPCZ 0.00 PMS 22.00 RD 41.00 R12 55.00 R24 63.00 R48 74.00 R72 0.00 R96 0.00

INSPEC COMPUTED BY THE PROGRAM IS 0.925

LOSS DATA

LKOPT SINK DLINK RATIO ENRAIN SINKS RATIO IIRIL CNSIL ALSMA RTIMP  
 0 0.00 0.00 1.00 0.00 0.00 0.00 1.00 0.10 0.00 0.00

1000. 4700. 5100. 3400. 2200. 1500. 900. 500. 200. 100.  
 UNIT GRAPH TOTALS 19600. CFS ON 0.71 INCH/S OVER THE AREA

RECESSION DATA

STRIDE -1.00 QRCSE -0.10 RTIOK= 2.00

MO.DA	HR.MN	PERIOD	RAI1	EXCS	LOSS	END-JF-PERIOD FUJA	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CUMP Q
1.01	6.00	1	0.11	0.00	0.11	239.	1.07	12.00	26	0.00	0.00	0.00	2156.
1.01	12.00	2	0.50	0.00	0.50	223.	1.07	18.00	27	0.00	0.00	0.00	2011.
1.01	18.00	3	1.46	0.03	0.83	835.	1.08	0.00	28	0.00	0.00	0.00	1677.
1.02	0.00	4	0.17	0.00	0.17	3143.	1.08	6.00	29	0.00	0.00	0.00	1751.
1.02	6.00	5	0.85	0.05	0.60	3431.	1.08	12.00	30	0.00	0.00	0.00	1634.
1.02	12.00	6	2.85	2.25	0.60	4789.	1.08	18.00	31	0.00	0.00	0.00	1524.
1.02	18.00	7	8.34	7.74	0.60	20101.	1.09	0.00	32	0.00	0.00	0.00	1422.
1.03	0.00	8	0.98	0.36	0.60	49478.	1.09	6.00	33	0.00	0.00	0.00	1327.
1.03	6.00	9	0.00	0.00	0.00	49698.	1.09	12.00	34	0.00	0.00	0.00	1238.
1.03	12.00	10	0.00	0.00	0.00	33698.	1.09	18.00	35	0.00	0.00	0.00	1155.
1.03	18.00	11	0.00	0.00	0.00	21969.	1.10	0.00	36	0.00	0.00	0.00	1078.
1.04	0.00	12	0.00	0.00	0.00	14680.	1.10	6.00	37	0.00	0.00	0.00	1009.
1.04	6.00	13	0.67	0.00	0.00	8766.	1.10	12.00	38	0.00	0.00	0.00	938.
1.04	12.00	14	0.00	0.00	0.00	4952.	1.10	18.00	39	0.00	0.00	0.00	875.
1.04	18.00	15	0.00	0.00	0.00	4621.	1.11	0.00	40	0.00	0.00	0.00	817.
1.05	0.00	16	0.00	0.00	0.00	4311.	1.11	6.00	41	0.00	0.00	0.00	762.

McFARLAND-JOHNSON ENGINEERS, INC.



1.05	0.00	17	0.00	0.00	0.00	4923.	1.11	12.00	42	0.00	0.00	0.00	711.
1.05	12.00	18	0.00	0.00	0.00	3753.	1.11	18.00	43	0.00	0.00	0.00	683.
1.05	18.00	19	0.00	0.00	0.00	3502.	1.12	0.00	44	0.00	0.00	0.00	619.
1.06	0.00	20	0.00	0.00	0.00	3267.	1.12	0.00	45	0.00	0.00	0.00	578.
1.06	0.00	21	0.00	0.00	0.00	3049.	1.12	12.00	46	0.00	0.00	0.00	539.
1.06	12.00	22	0.00	0.00	0.00	2844.	1.12	18.00	47	0.00	0.00	0.00	503.
1.06	18.00	23	0.00	0.00	0.00	2654.	1.13	0.00	48	0.00	0.00	0.00	469.
1.07	0.00	24	0.00	0.00	0.00	2476.	1.13	0.00	49	0.00	0.00	0.00	438.
1.07	0.00	25	0.00	0.00	0.00	2310.	1.13	12.00	50	0.00	0.00	0.00	408.
							SUM 15.05 11.04 4.01 279293.						
							( 382.)( 280.)( 102.)( 7908.69)						

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49698.	49588.	38477.	18398.	278970.
CMS	1407.	1404.	1090.	521.	7900.
INCHES		1.00	5.59	8.02	10.14
MM		45.77	142.05	203.76	257.48
AC-FT		24589.	76318.	109474.	138532.
THOUS CU A		30330.	94137.	135034.	170630.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RTIO 1

46.	45.	107.	629.	680.	958.	4020.	9696.	9940.	6740.
4394.	2932.	1754.	990.	924.	862.	805.	751.	700.	653.
610.	569.	531.	495.	462.	431.	402.	375.	350.	327.
305.	284.	265.	248.	231.	210.	201.	188.	175.	163.
152.	142.	133.	124.	116.	108.	101.	94.	88.	82.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	9940.	9918.	7695.	3680.	55794.
CMS	281.	281.	218.	104.	1580.
INCHES		0.36	1.12	1.60	2.03
MM		9.15	28.41	40.75	51.50
AC-FT		4916.	15264.	21695.	27666.
THOUS CU M		6066.	16827.	27007.	34126.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RTIO 2

84.	78.	292.	1100.	1201.	1676.	7035.	17317.	17394.	11794.
7689.	5131.	3069.	1733.	1617.	1509.	1406.	1314.	1226.	1144.
1067.	990.	929.	867.	809.	754.	704.	657.	613.	572.
533.	498.	464.	433.	404.	377.	352.	328.	306.	286.
267.	249.	232.	217.	202.	189.	176.	164.	153.	143.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	17394.	17356.	13467.	6439.	97640.
CMS	493.	491.	381.	182.	2765.
INCHES		0.63	1.96	2.81	3.55
MM		16.02	49.72	71.32	90.12
AC-FT		8606.	26711.	38316.	48416.
THOUS CU A		10615.	32948.	47262.	59721.

# HYDROGRAPH AT STA 3 FOR PLAN 1, RTIO 3

119.	111.	416.	1571.	1716.	2394.	10051.	24739.	24849.	16849.
10965.	7330.	4384.	2476.	2310.	2150.	2011.	1877.	1751.	1634.
1524.	1422.	1327.	1238.	1155.	1078.	1006.	938.	875.	817.

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704.	711.	003.	019.	570.	539.	503.	409.	436.	408.
301.	350.	332.	310.	209.	209.	251.	235.	219.	204.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	21049.	24794.	19239.	9199.	139405.
CMS	704.	702.	545.	200.	3950.
InChES		0.90	2.80	4.01	5.07
MM		22.48	71.03	101.88	126.74
AC-FT		12294.	38159.	54737.	69160.
InJUS Cu A		15165.	47003.	67517.	65315.

# HYDROGRAPH AT STA 3 FOR PLAN 1, R110 4.

155.	140.	543.	2043.	2230.	3113.	13066.	32100.	32303.	21903.
14200.	9529.	5099.	3219.	3003.	2802.	2615.	2440.	2276.	2124.
1982.	1849.	1725.	1010.	1502.	1401.	1307.	1220.	1138.	1002.
991.	924.	803.	805.	751.	701.	654.	610.	569.	531.
495.	402.	431.	402.	375.	350.	327.	305.	285.	265.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	32303.	32232.	25010.	11958.	181331.
CMS	915.	913.	708.	339.	5135.
InChES		1.17	3.64	5.21	6.59
MM		29.75	92.33	132.45	107.36
AC-FT		15983.	49507.	71158.	89910.
InJUS Cu A		19714.	61189.	87772.	110910.

# HYDROGRAPH AT STA 3 FOR PLAN 1, R110 5

191.	178.	000.	2514.	2745.	3831.	10081.	39582.	39756.	20958.
17575.	11728.	7015.	3962.	3097.	3449.	3218.	3003.	2801.	2614.
2439.	2276.	2123.	1901.	1648.	1725.	1609.	1501.	1401.	1307.
1219.	1138.	1002.	990.	924.	852.	805.	751.	700.	653.
010.	509.	531.	495.	402.	431.	402.	375.	350.	327.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	39756.	39070.	30782.	14715.	223170.
CMS	1120.	1123.	872.	417.	6320.
InChES		1.44	4.47	6.42	8.11
MM		36.61	113.64	103.01	205.98
AC-FT		19071.	61054.	87579.	110600.
InJUS Cu A		24264.	75310.	108027.	136504.

# HYDROGRAPH AT STA 3 FOR PLAN 1, R110 6

239.	223.	835.	3143.	3431.	4789.	20101.	49478.	49698.	33698.
21909.	14000.	8708.	4952.	4021.	4311.	4023.	3753.	3502.	3267.
3049.	2844.	2654.	2470.	2310.	2156.	2011.	1877.	1751.	1634.
1524.	1422.	1327.	1238.	1155.	1078.	1006.	938.	875.	817.
762.	711.	603.	019.	570.	539.	503.	469.	438.	408.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49698.	49588.	38477.	18398.	278970.
CMS	1407.	1404.	1090.	521.	7900.
InChES		1.80	5.59	8.02	10.14
MM		45.77	142.05	203.76	257.48
AC-FT		24589.	76316.	109474.	130332.
InJUS Cu A		30330.	94137.	135000.	170630.

McFARLAND-JOHNSON ENGINEERS, INC.

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## COMBINE HYDROGRAPHS

COMBINE FLOWS AT AVON GAGE

ISIAQ	ICOMP	IECON	ITAPE	JPLI	JPRI	INAME	ISIAGE	IAUTG
3	2	0	0	0	0	1	0	0

SUM OF 2 HYDROGRAPHS AT 3 PLAN 1 RTIO 1

110.	107.	252.	840.	1156.	1765.	5690.	14051.	18122.	18252.
10752.	14042.	10739.	7811.	5802.	4385.	3365.	2743.	2361.	2109.
1325.	1777.	1550.	1530.	1431.	1335.	1245.	1162.	1084.	1011.
943.	880.	221.	766.	715.	607.	622.	561.	542.	506.
472.	440.	411.	363.	357.	334.	311.	290.	271.	253.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	18252.	18187.	16793.	10112.	155071.
CAS	517.	515.	470.	286.	4391.
INCHES		0.10	0.36	0.66	0.67
MM		2.56	9.53	17.21	21.99
AC-FT		9018.	33309.	60171.	76695.
INCHES CU A		11124.	41066.	74219.	94849.

SUM OF 2 HYDROGRAPHS AT 3 PLAN 1 RTIO 2

193.	167.	441.	1470.	2022.	3089.	9957.	24589.	31713.	31941.
29317.	24571.	18793.	13609.	10294.	7673.	5888.	4800.	4132.	3691.
3309.	3110.	2887.	2087.	2505.	2330.	2179.	2033.	1696.	1769.
1651.	1540.	1437.	1341.	1251.	1167.	1089.	1010.	940.	885.
625.	770.	719.	670.	626.	584.	545.	508.	474.	442.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	31941.	31827.	29388.	17096.	271375.
CAS	904.	901.	832.	501.	7654.
INCHES		0.18	0.66	1.19	1.52
MM		4.51	16.67	30.12	38.49
AC-FT		15782.	58290.	105298.	134566.
INCHES CU A		19467.	71900.	129884.	165965.

SUM OF 2 HYDROGRAPHS AT 3 PLAN 1 RTIO 3

270.	207.	630.	2099.	2889.	4412.	14224.	35127.	45305.	45630.
41881.	35106.	20847.	19527.	14705.	10902.	8412.	6657.	5903.	5273.
4813.	4443.	4124.	3993.	4439.	5541.	6763.	7008.	7986.	7999.
7776.	7430.	7024.	6000.	6182.	5780.	5398.	5040.	4703.	4389.
4096.	3621.	3500.	3327.	3104.	2690.	2702.	2521.	2352.	2195.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	45630.	45467.	41963.	25280.	473711.
CAS	1292.	1287.	1169.		13414.

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INCHES	0.25	0.94	1.09	2.65
AS	0.45	23.02	43.02	07.10
AC-FT	22540.	03272.	150420.	234890.
THOUS CU	27010.	102715.	105540.	209742.

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 RTIO 4					
350.	347.	019.	2729.	3755.	5730.	10491.	45005.	56690.	59312.
54445.	45030.	55932.	30550.	30972.	31059.	31349.	29539.	27070.	24586.
22373.	20488.	10077.	17477.	10232.	15100.	14074.	13122.	12238.	11410.
10050.	9930.	9271.	0000.	8071.	7530.	7026.	0055.	0110.	5707.
5325.	4900.	4035.	4325.	4035.	3755.	3513.	3270.	3058.	2853.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	59319.	59108.	54578.	39740.	817132.
CAS	1080.	1674.	1545.	1125.	23139.
INCHES	0.33	1.22	2.00		4.56
MM	8.38	30.90	67.64		115.89
AC-FT	29310.	100254.	236500.		405109.
THOUS CU	36153.	133529.	291726.		499794.

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 RTIO 5					
441.	427.	1009.	3359.	4022.	7000.	22759.	50203.	72468.	73008.
00107.	00373.	09501.	73100.	69920.	61347.	52107.	44022.	37401.	32416.
20632.	20701.	23501.	21059.	20040.	10021.	17330.	10150.	15005.	14052.
13109.	12230.	11410.	10040.	9933.	9200.	0647.	0000.	7520.	7024.
6553.	0114.	5705.	0323.	4900.	4634.	4324.	4034.	3764.	3512.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	73100.	72748.	09353.	01291.	1160553.
CAS	2072.	2000.	1905.	1730.	32003.
INCHES	0.41	1.55	4.11		0.40
MM	10.32	39.37	104.31		164.59
AC-FT	36073.	137039.	304707.		575481.
THOUS CU	44496.	169775.	449000.		709845.

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 RTIO 6					
501.	534.	1201.	4199.	5770.	6025.	20448.	70254.	90610.	91260.
95036.	110338.	135029.	127091.	108119.	00599.	69002.	50172.	40970.	40367.
35033.	32085.	29303.	27007.	25027.	23264.	21004.	20192.	10030.	17564.
10305.	15207.	14203.	13307.	12410.	11505.	10809.	10005.	9410.	8779.
0192.	7643.	7131.	6054.	6208.	5792.	5404.	5043.	4705.	4390.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	135329.	131800.	121009.	90035.	1610447.
CAS	3840.	3734.	3427.	2500.	45029.
INCHES	0.74	2.70	6.07		9.04
MM	18.70	68.00	154.25		229.53
AC-FT	05385.	240010.	539314.		802530.
THOUS CU	20051.	290057.	605234.		989913.

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## HYDROGRAPH RESULTS

ROUTE FLOWS TO CONFLUENCE OF BLACK CREEK BY DASSING FLOWS

ISTAG	ICOMP	IECUM	ITAPE	JPLI	JPHI	INAME	ISTAGE	IAUTO
4	1	0	0	0	0	1	0	0

ROUTING DATA			
LOSS	CLOSS	AVG	LAG
0.0	0.000	0.00	0

MSIPS	MSIDB	LAG	AMSKA	X	TSK	SIGMA	ISPRAI
0	0	1	0.000	0.000	0.000	0.	0

STATION 4, PLAN 1, R110 1

OUTFLOW									
110.	110.	107.	252.	840.	1156.	1765.	5690.	14051.	18122.
18252.	10752.	14942.	10739.	7511.	5862.	4385.	3365.	2743.	2361.
2169.	1925.	1777.	1650.	1536.	1431.	1335.	1245.	1162.	1084.
1011.	943.	860.	821.	700.	715.	667.	622.	581.	542.
506.	472.	440.	411.	383.	357.	334.	311.	290.	271.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	10252.	16187.	16793.	10112.	154420.
CMS	517.	515.	476.	266.	4367.
INCHES		0.10	0.36	0.56	0.87
MM		2.56	9.53	17.21	21.97
AC-FI		9018.	33309.	60171.	76826.
INCHES CU M		11124.	41066.	74219.	94755.

STATION 4, PLAN 1, R110 2

OUTFLOW									
193.	193.	187.	441.	1470.	2022.	3089.	9957.	24589.	31713.
31941.	29317.	24574.	18793.	13069.	10294.	7673.	5888.	4800.	4132.
3091.	3369.	3110.	2867.	2087.	2505.	2336.	2179.	2033.	1896.
1769.	1651.	1540.	1437.	1341.	1251.	1167.	1069.	1016.	948.
665.	625.	770.	719.	670.	626.	584.	545.	508.	474.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	31941.	31827.	29388.	17696.	271110.
CMS	904.	901.	832.	501.	7677.
INCHES		0.16	0.60	1.19	1.51
MM		4.51	16.07	30.12	38.45
AC-FI		15782.	58290.	105298.	134435.
INCHES CU M		19467.	71900.	129864.	165823.

STATION 4, PLAN 1, R110 3

OUTFLOW									
276.	276.	267.	670.	2099.	2869.	4412.	14224.	35127.	45305.
45030.	41861.	35106.	20847.	19527.	14705.	10962.	8412.	6857.	5903.
5273.	4613.	4443.	4124.	3993.	4439.	5541.	6703.	7608.	7986.

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7999.	1715.	7430.	1024.	8800.	8182.	5780.	5375.	5045.	4703.
4369.	4090.	3021.	3500.	3327.	3104.	2890.	2742.	2521.	2352.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	40030.	40407.	41953.	25230.	471713.
CAS	1292.	1237.	1189.	715.	13337.
INCHES		0.25	0.94	1.59	2.03
MM		0.45	23.64	43.04	66.90
AC-FI		22545.	63272.	150420.	233917.
INDUS CU A		27810.	102715.	165340.	265520.

STATION 4, PLAN 1, RII 4

OUTFLOW

359.	350.	347.	319.	2729.	3755.	5730.	16471.	45685.	58696.
59319.	54445.	45030.	35932.	30356.	30972.	31759.	31349.	29539.	27076.
24500.	22373.	20400.	18677.	17477.	16232.	15106.	14074.	13122.	12238.
11410.	10050.	9930.	9271.	8000.	8071.	7530.	7020.	6555.	6116.
5707.	5325.	4900.	4635.	4325.	4035.	3765.	3513.	3270.	3056.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	59319.	59100.	54578.	39746.	614534.
CAS	1080.	1074.	1545.	1125.	23005.
INCHES		0.33	1.22	2.00	4.55
MM		0.38	30.90	67.04	115.52
AC-FI		29310.	107254.	230006.	403901.
INDUS CU A		36153.	133529.	291725.	496205.

STATION 4, PLAN 1, RII 5

OUTFLOW

441.	441.	427.	1009.	3359.	4022.	7600.	22759.	56203.	72400.
73000.	66157.	65373.	69561.	73150.	69924.	61347.	52107.	44022.	37401.
32416.	28032.	25701.	23501.	21639.	20040.	18621.	17330.	16156.	15005.
14052.	13109.	12250.	11410.	10046.	9933.	9208.	8647.	8060.	7528.
7024.	6553.	6114.	5705.	5323.	4906.	4634.	4324.	4034.	3764.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	73100.	72740.	69393.	61291.	1157355.
CAS	2072.	2000.	1965.	1730.	32773.
INCHES		0.41	1.55	4.11	6.46
MM		10.32	39.37	104.31	164.14
AC-FI		36073.	137639.	364707.	573095.
INDUS CU A		44490.	169775.	449000.	707539.

STATION 4, PLAN 1, RII 6

OUTFLOW

551.	551.	534.	1201.	4199.	5775.	8625.	28448.	70254.	90610.
91200.	95830.	115330.	135029.	127091.	106119.	86599.	69002.	56172.	46970.
40367.	35633.	32905.	29303.	27007.	25027.	23264.	21004.	20192.	18030.
17504.	16305.	15207.	14203.	13307.	12410.	11505.	10009.	10005.	9410.
8779.	8192.	7043.	7131.	6054.	6206.	5792.	5494.	5043.	4705.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
McFARLAND-JOHNSON ENGINEERS, INC.				

CFS	133747.	131681.	121079.	90033.	154434.
C4S	3846.	3734.	3427.	2566.	45710.
INCHES		0.74	2.70	6.07	9.01
IN		18.70	68.65	154.25	226.97
AC-FT		65385.	240018.	539314.	800554.
THOUS CU M		80051.	290057.	605234.	987469.

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### SUB-AREA RUNOFF COMPUTATION

#### HONEYCREEK INFLOW HYDROGRAPH

ISLAW	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISLAGE	IAUTO
4	0	0	0	0	0	1	0	0

#### HYDROGRAPH DATA

IMYDS	IUNG	TAREA	SNAP	TRSDA	IRSPC	KATIO	ISNGW	ISAGE	LOCAL
1	-1	200.00	0.00	2460.00	0.00	0.000	0	1	0

#### PRECIP DATA

SPFL	PMS	R6	R12	R24	R48	R72	R96
0.00	22.00	41.00	55.00	63.00	74.00	0.00	0.00

IRSPC COMPUTED BY THE PROGRAM IS 0.925

#### LOSS DATA

LRUPI	SIRKR	DLTKR	KIOL	ERAIN	SIRKS	RIOK	SIRIL	CHSIL	ALSMX	KIIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

GIVEN UNIT GRAPH, NUHGU= 12

100.	500.	3000.	6300.	5000.	3600.	2400.	1700.	1300.	1000.
700.	400.								

UNIT GRAPH TOTALS 27200. CFS OR 0.97 INCHES OVER THE AREA

#### RECESSION DATA

SIRTS= -1.00    IRCSN= -0.10    RIOR= 2.00

#### END-OF-PERIOD FLOW

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.11	0.00	0.11	243.	1.07	12.00	26	0.00	0.00	0.00	3461.
1.01	12.00	2	0.50	0.00	0.50	226.	1.07	18.00	27	0.00	0.00	0.00	3229.
1.01	18.00	3	1.46	0.63	0.83	274.	1.08	0.00	28	0.00	0.00	0.00	3013.
1.02	0.00	4	0.17	0.00	0.17	511.	1.08	6.00	29	0.00	0.00	0.00	2811.
1.02	6.00	5	0.65	0.05	0.60	2447.	1.08	12.00	30	0.00	0.00	0.00	2623.
1.02	12.00	6	2.85	2.25	0.60	4374.	1.08	18.00	31	0.00	0.00	0.00	2447.
1.02	18.00	7	6.34	7.74	0.60	5754.	1.09	0.00	32	0.00	0.00	0.00	2283.
1.03	0.00	8	0.98	0.38	0.60	14728.	1.09	6.00	33	0.00	0.00	0.00	2131.
1.03	6.00	9	0.00	0.00	0.00	44142.	1.09	12.00	34	0.00	0.00	0.00	1988.
1.03	12.00	10	0.00	0.00	0.00	64082.	1.09	18.00	35	0.00	0.00	0.00	1855.
1.03	18.00	11	0.00	0.00	0.00	54864.	1.10	0.00	36	0.00	0.00	0.00	1731.
1.04	0.00	12	0.00	0.00	0.00	36194.	1.10	6.00	37	0.00	0.00	0.00	1615.
1.04	6.00	13	0.00	0.00	0.00	24362.	1.10	12.00	38	0.00	0.00	0.00	1507.
1.04	12.00	14	0.00	0.00	0.00	17383.	1.10	18.00	39	0.00	0.00	0.00	1406.
1.04	18.00	15	0.00	0.00	0.00	13077.	1.11	0.00	40	0.00	0.00	0.00	1311.
1.05	0.00	16	0.00	0.00	0.00	9909.	1.11	6.00	41	0.00	0.00	0.00	1224.
1.05	6.00	17	0.00	0.00	0.00	6773.	1.11	12.00	42	0.00	0.00	0.00	1142.

McFARLAND-JOHNSON ENGINEERS, INC.

1.05	12.00	18	0.00	0.00	0.00	6026.	1.11	18.00	43	0.00	0.00	0.00	1065.
1.05	18.00	19	0.00	0.00	0.00	5622.	1.12	0.00	44	0.00	0.00	0.00	994.
1.06	0.00	20	0.00	0.00	0.00	5246.	1.12	6.00	45	0.00	0.00	0.00	927.
1.06	6.00	21	0.00	0.00	0.00	4895.	1.12	12.00	46	0.00	0.00	0.00	865.
1.06	12.00	22	0.00	0.00	0.00	4567.	1.12	18.00	47	0.00	0.00	0.00	807.
1.06	18.00	23	0.00	0.00	0.00	4261.	1.13	0.00	48	0.00	0.00	0.00	753.
1.07	0.00	24	0.00	0.00	0.00	3976.	1.13	6.00	49	0.00	0.00	0.00	703.
1.07	6.00	25	0.00	0.00	0.00	3709.	1.13	12.00	50	0.00	0.00	0.00	656.

SUM 15.05 11.04 4.01 380190.  
( 382.)( 280.)( 102.)(10765.78)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	64082.	59473.	47348.	24769.	379741.
CMS	1815.	1664.	1341.	701.	10753.
INCHES		2.13	6.78	10.63	13.59
MM		54.05	172.11	270.11	345.10
AC-FT		29491.	93913.	147365.	186301.
THOUS CU M		36376.	115640.	181797.	232266.

#### HYDROGRAPH AT STA 4 FOR PLAN 1, R110 1

49.	45.	55.	102.	489.	875.	1151.	2946.	8828.	12816.
10973.	7238.	4672.	3477.	2615.	1982.	1355.	1205.	1124.	1049.
979.	913.	852.	795.	742.	692.	646.	603.	562.	525.
489.	457.	426.	396.	371.	346.	323.	301.	281.	262.
245.	226.	213.	199.	185.	173.	161.	151.	141.	131.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	12616.	11895.	9470.	4954.	75946.
CMS	363.	337.	266.	140.	2151.
INCHES		0.43	1.36	2.13	2.72
MM		10.81	34.42	54.02	69.02
AC-FT		5898.	18783.	29477.	37660.
THOUS CU M		7275.	23166.	36359.	46453.

#### HYDROGRAPH AT STA 4 FOR PLAN 1, R110 2

85.	79.	96.	179.	857.	1531.	2014.	5155.	15450.	22429.
19203.	12667.	6527.	6084.	4577.	3468.	2371.	2109.	1968.	1836.
1713.	1598.	1491.	1391.	1296.	1211.	1130.	1055.	984.	918.
857.	799.	746.	696.	649.	606.	565.	527.	492.	459.
426.	400.	373.	348.	325.	303.	283.	264.	246.	230.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	22429.	20816.	16572.	8669.	132909.
CMS	635.	589.	469.	245.	3764.
INCHES		0.74	2.37	3.72	4.76
MM		18.92	60.24	94.54	120.78
AC-FT		10322.	32870.	51585.	65965.
THOUS CU M		12732.	40544.	63629.	81293.

#### HYDROGRAPH AT STA 4 FOR PLAN 1, R110 3

121.	113.	137.	255.	1224.	2187.	2877.	7364.	22071.	32041.
27432.	18096.	12181.	8692.	6536.	4954.	3387.	3013.	2811.	2623.
2447.	2263.	2131.	1988.	1855.	1731.	1615.	1506.	1406.	1311.
1224.	1142.	1065.	994.	927.	865.	807.	753.	703.	656.

WILLIAMSON ENGINEERS INC.



612. 571. 533. 497. 464. 433. 404. 377. 351. 328.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	32041.	29737.	23674.	12364.	169871.
CMS	907.	842.	670.	351.	5377.
INCHES		1.06	3.39	5.32	6.79
MM		27.02	86.06	135.05	172.55
AC-FT		14745.	46956.	73093.	94151.
INDUS CU M		13188.	57920.	90898.	116133.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 4

156.	147.	178.	332.	1591.	2843.	3740.	9573.	28692.	41653.
35602.	23525.	15835.	11299.	8500.	6441.	4409.	3917.	3655.	3410.
3182.	2908.	2770.	2564.	2411.	2250.	2099.	1958.	1827.	1705.
1591.	1481.	1385.	1292.	1206.	1125.	1050.	979.	914.	852.
795.	742.	692.	646.	603.	562.	525.	490.	457.	426.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	41653.	38658.	30776.	16100.	246832.
CMS	1179.	1095.	871.	450.	6989.
INCHES		1.38	4.40	6.91	8.83
MM		35.13	111.87	175.57	224.31
AC-FT		19169.	61043.	95800.	122390.
INDUS CU M		23645.	75296.	118168.	150973.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 5

194.	181.	219.	409.	1958.	3499.	4603.	11782.	35314.	51206.
43892.	28954.	19490.	13907.	10461.	7927.	5419.	4821.	4498.	4197.
3916.	3653.	3409.	3181.	2968.	2769.	2583.	2410.	2249.	2098.
1956.	1827.	1704.	1590.	1484.	1384.	1292.	1205.	1124.	1049.
979.	913.	852.	795.	742.	692.	646.	603.	562.	525.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	51206.	47579.	37878.	19815.	303793.
CMS	1452.	1347.	1073.	561.	8602.
INCHES		1.70	5.42	8.51	10.87
MM		43.24	137.69	216.09	276.08
AC-FT		23593.	75130.	117908.	150641.
INDUS CU M		29101.	92672.	145438.	185813.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 6

243.	226.	274.	511.	2447.	4374.	5754.	14728.	44142.	64082.
54864.	36192.	24362.	17383.	13077.	9909.	6773.	6020.	5622.	5246.
4895.	4507.	4261.	3976.	3709.	3461.	3229.	3013.	2811.	2623.
2447.	2283.	2131.	1988.	1855.	1731.	1615.	1507.	1406.	1311.
1224.	1142.	1065.	994.	927.	865.	807.	753.	703.	656.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	64082.	59473.	47348.	24769.	379741.
CMS	1815.	1684.	1341.	701.	10753.
INCHES		2.13	6.78	10.63	13.59
MM		54.05	172.11	270.11	345.10
AC-FT		29491.	93913.	147365.	188301.
INDUS CU M		36370.	115840.	181797.	232266.



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## SUB-AREA RUNOFF COMPUTATION

## JATKA CREEK INFLOW HYDROGRAPH

ISTAG	ICOMP	IECON	ITAPE	JPLT	JERT	INAME	ISTAGE	IAUTO
4	0	0	0	0	0	1	0	0

HYDROGRAPH DATA									
1HYD	IUNG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	-1	215.00	0.00	2460.00	0.00	0.000	0	1	0

PRECIP DATA							
SPFE	PAS	R6	R12	R24	R48	R72	R96
0.00	22.00	41.00	55.00	63.00	74.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.925

LOSS DATA										
LRGPT	SIRKR	DLTKR	RIOL	ERAIN	SIRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

GIVEN UNIT GRAPH, NUHGU= 12										
100.	400.	1200.	2800.	4200.	4200.	3000.	2100.	1500.	1100.	
800.	500.									

UNIT GRAPH TOTALS 21900. CFS OR 0.95 INCHES OVER THE AREA

PECESSION DATA		
STRTQ=	-1.00	JRCSN= -0.10
		RIICR= 2.00

END-OF-PERIOD FLOW													
MO. DA	HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO. DA	HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.11	0.00	0.11	201.	1.07	12.00	26	0.00	0.00	0.00	2529.
1.01	12.00	2	0.50	0.00	0.50	187.	1.07	18.00	27	0.00	0.00	0.00	2360.
1.01	18.00	3	1.46	0.63	0.63	237.	1.08	0.00	28	0.00	0.00	0.00	2202.
1.02	0.00	4	0.17	0.00	0.17	414.	1.08	6.00	29	0.00	0.00	0.00	2055.
1.02	6.00	5	0.65	0.05	0.60	910.	1.08	12.00	30	0.00	0.00	0.00	1917.
1.02	12.00	6	2.55	2.25	0.60	2144.	1.08	18.00	31	0.00	0.00	0.00	1789.
1.02	18.00	7	8.34	7.74	0.60	4501.	1.09	0.00	32	0.00	0.00	0.00	1669.
1.03	0.00	8	0.93	0.38	0.60	8732.	1.09	6.00	33	0.00	0.00	0.00	1557.
1.03	6.00	9	0.00	0.00	0.00	17943.	1.09	12.00	34	0.00	0.00	0.00	1453.
1.03	12.00	10	0.00	0.00	0.00	33202.	1.09	18.00	35	0.00	0.00	0.00	1355.
1.03	18.00	11	0.00	0.00	0.00	44195.	1.10	0.00	36	0.00	0.00	0.00	1265.
1.04	0.00	12	0.00	0.00	0.00	41721.	1.10	6.00	37	0.00	0.00	0.00	1160.
1.04	6.00	13	0.00	0.00	0.00	30186.	1.10	12.00	38	0.00	0.00	0.00	1101.
1.04	12.00	14	0.00	0.00	0.00	21205.	1.10	18.00	39	0.00	0.00	0.00	1027.
1.04	18.00	15	0.00	0.00	0.00	14989.	1.11	0.00	40	0.00	0.00	0.00	958.
1.05	0.00	16	0.00	0.00	0.00	10973.	1.11	6.00	41	0.00	0.00	0.00	894.
1.05	6.00	17	0.00	0.00	0.00	7796.	1.11	12.00	42	0.00	0.00	0.00	834.
1.05	12.00	18	0.00	0.00	0.00	4404.	1.11	18.00	43	0.00	0.00	0.00	779.
1.05	18.00	19	0.00	0.00	0.00	4109.	1.12	0.00	44	0.00	0.00	0.00	726.
1.06	0.00	20	0.00	0.00	0.00	3834.	1.12	6.00	45	0.00	0.00	0.00	678.
1.06	6.00	21	0.00	0.00	0.00	3577.	1.12	12.00	46	0.00	0.00	0.00	632.
1.06	12.00	22	0.00	0.00	0.00	3338.	1.12	18.00	47	0.00	0.00	0.00	590.
1.06	18.00	23	0.00	0.00	0.00	3114.	1.13	0.00	48	0.00	0.00	0.00	551.
1.07	0.00	24	0.00	0.00	0.00	2906.	1.13	6.00	49	0.00	0.00	0.00	514.

McFARLAND - JOHNSON ENGINEERS, INC.

40 0.00 0.00 0.00 2711. 1.13 12.00 50 0.00 0.00 0.00 479.  
 SUM 15.05 11.04 4.01 298623.  
 ( 382.)( 280.)( 102.)( 8456.06)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	44195.	42958.	35820.	19971.	294282.
CMS	1251.	1216.	1014.	566.	3446.
INCHES		1.80	6.20	10.37	12.91
MM		47.21	157.49	263.17	327.80
AC-FI		21302.	71061.	118830.	147909.
THOUS CU 4		20275.	87652.	146531.	162443.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 1

	40.	37.	47.	83.	182.	429.	900.	1740.	3589.	6640.
8839.	8344.	6037.	4241.	2998.	2195.	1559.	881.	822.	767.	
715.	608.	023.	581.	542.	505.	472.	440.	411.	383.	
308.	334.	311.	291.	271.	253.	230.	220.	205.	192.	
179.	107.	150.	145.	136.	120.	118.	110.	103.	96.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	8839.	8592.	7105.	3994.	59657.
CMS	250.	243.	203.	113.	1689.
INCHES		0.37	1.24	2.07	2.58
MM		9.44	31.50	52.67	65.50
AC-FI		4200.	14212.	23707.	29502.
THOUS CU M		5255.	17530.	29316.	36409.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 2

	70.	60.	83.	145.	318.	750.	1575.	3050.	6280.	11621.
15466.	14602.	10565.	7422.	5246.	3840.	2729.	1541.	1438.	1342.	
1252.	1108.	1090.	1017.	949.	885.	826.	771.	719.	671.	
620.	584.	545.	508.	474.	443.	413.	365.	360.	335.	
313.	292.	272.	254.	237.	221.	207.	193.	180.	168.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	15466.	15035.	12539.	6990.	104399.
CMS	436.	426.	355.	198.	2950.
INCHES		0.65	2.17	3.63	4.52
MM		16.52	55.12	92.18	114.73
AC-FI		7456.	24871.	41592.	51768.
THOUS CU M		9190.	30676.	51303.	63855.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 3

	100.	94.	119.	207.	455.	1072.	2251.	4366.	8971.	16601.
22098.	20861.	15093.	10603.	7495.	5486.	3898.	2202.	2055.	1917.	
1789.	1669.	1557.	1453.	1355.	1265.	1160.	1101.	1027.	958.	
894.	834.	779.	726.	678.	632.	590.	551.	514.	479.	
447.	417.	369.	303.	339.	316.	295.	275.	257.	240.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	22098.	21479.	17913.	9905.	149141.
CMS	620.	606.	507.	283.	4223.
INCHES		0.93	3.10	5.18	6.45
MM		23.60	78.74	130.9	163.90

McFARLAND-JOHNSON ENGINEERS, INC.

AC-FT	10651.	35530.	59416.	73954.
THOUS CU M	13138.	43325.	73291.	91221.

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 4				
130.	122.	154.	209.	591.
28727.	27119.	19521.	13783.	9743.
2325.	2169.	2024.	1889.	1762.
1163.	1085.	1012.	944.	881.
581.	542.	506.	472.	441.
				411.
				384.
				358.
				334.
				312.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	28727.	27923.	23287.	12981.	193864.
CMS	813.	791.	659.	368.	5490.
INCHES		1.21	4.03	6.74	8.39
MM		30.69	102.37	171.19	213.07
AC-FT		13846.	46189.	77243.	96141.
THOUS CU M		17079.	56974.	95276.	116568.

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 5				
160.	150.	190.	331.	728.
35356.	33377.	24149.	16904.	11991.
2802.	2670.	2491.	2324.	2169.
1431.	1335.	1240.	1162.	1084.
715.	608.	523.	581.	542.
				506.
				472.
				440.
				411.
				383.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	35356.	34367.	28661.	15977.	238626.
CMS	1001.	973.	812.	452.	6757.
INCHES		1.49	4.96	8.30	10.32
MM		37.77	125.99	210.70	262.24
AC-FT		17041.	56849.	95068.	118327.
THOUS CU M		21020.	70122.	117265.	145954.

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 6				
261.	187.	237.	414.	910.
44195.	41721.	30180.	21205.	14989.
3577.	3338.	3114.	2906.	2711.
1789.	1609.	1557.	1453.	1355.
894.	834.	779.	726.	678.
				632.
				590.
				551.
				514.
				479.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	44195.	42958.	35826.	19971.	298283.
CMS	1251.	1216.	1014.	566.	8446.
INCHES		1.86	6.20	10.37	12.91
MM		47.21	157.49	263.37	327.80
AC-FT		21302.	71061.	118835.	147909.
THOUS CU M		26275.	87652.	146581.	182443.

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SUB-AREA RUNOFF COMPUTATION  
McFARLAND-JOHNSON ENGINEERS, INC.



# LOCAL INFLOW HYDROGRAPH

ISTAQ 4 ICOMP 0 IECON 0 IIAPE 0 JPLI 0 JPKI 0 INAME 1 ISAGE 0 IAU10 0

INDG 1 IUMG -1 IAREA 71.00 SWAP 0.00 TRSDA 0.00 TRSPC 0.00 RALLO 0.0000 ISNCA 0 ISAME 1 LOCAL 0

## HYDROGRAPH DATA

SPFE 0.00 PMS 22.00 H6 41.00 H12 55.00 R24 63.00 R48 74.00 R72 0.00 R96 0.00

IRSPC COMPUTED BY THE PROGRAM IS 0.925

## PRECIP DATA

LRUPF 0 STRKR 0.00 OLTKR 0.00 RTIOL 1.00 ERAIN 0.00 STRAS 0.00 RFIUK 1.00 STRIL 1.00 CNSTL 0.10 ALSMX 0.00 RTIMP 0.00

400. 2400. 2300. 1200. 700. 400. 200. 100. UNIF GRAPH TOTALS 7700. CFS OR 1.01 INCHES OVER THE AREA

## LOSS DATA

STRIJ=-1.50 2RCSN=-0.10 RTIJK=2.00

NO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW	43.0A	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.11	0.00	0.11	99.	1.07	12.00	26	0.00	0.00	0.00	970.
1.01	12.00	2	0.50	0.00	0.50	93.	1.07	18.00	27	0.00	0.00	0.00	905.
1.01	18.00	3	1.40	0.03	0.83	337.	1.08	0.00	28	0.00	0.00	0.00	844.
1.02	0.00	4	0.17	0.00	0.17	1580.	1.08	6.00	29	0.00	0.00	0.00	788.
1.02	6.00	5	0.55	0.05	0.60	1539.	1.09	12.00	30	0.00	0.00	0.00	735.
1.02	12.00	6	2.85	2.25	0.60	1844.	1.08	18.00	31	0.00	0.00	0.00	686.
1.02	18.00	7	8.34	7.74	0.60	9112.	1.09	0.00	32	0.00	0.00	0.00	640.
1.03	0.00	8	0.38	0.38	0.60	24209.	1.09	6.00	33	0.00	0.00	0.00	597.
1.03	6.00	9	0.00	0.00	0.00	21620.	1.09	12.00	34	0.00	0.00	0.00	557.
1.03	12.00	10	0.00	0.00	0.00	11803.	1.09	18.00	35	0.00	0.00	0.00	520.
1.03	18.00	11	0.00	0.00	0.00	8828.	1.10	0.00	36	0.00	0.00	0.00	485.
1.04	0.00	12	0.00	0.00	0.00	3860.	1.10	6.00	37	0.00	0.00	0.00	452.
1.04	6.00	13	0.00	0.00	0.00	2387.	1.10	12.00	38	0.00	0.00	0.00	422.
1.04	12.00	14	0.00	0.00	0.00	2228.	1.10	18.00	39	0.00	0.00	0.00	394.
1.04	18.00	15	0.00	0.00	0.00	2078.	1.11	0.00	40	0.00	0.00	0.00	367.
1.05	0.00	16	0.00	0.00	0.00	1939.	1.11	6.00	41	0.00	0.00	0.00	343.
1.05	6.00	17	0.00	0.00	0.00	1809.	1.11	12.00	42	0.00	0.00	0.00	320.
1.05	12.00	18	0.00	0.00	0.00	1688.	1.11	18.00	43	0.00	0.00	0.00	298.
1.05	18.00	19	0.00	0.00	0.00	1575.	1.12	0.00	44	0.00	0.00	0.00	278.
1.06	0.00	20	0.00	0.00	0.00	1470.	1.12	6.00	45	0.00	0.00	0.00	260.
1.06	6.00	21	0.00	0.00	0.00	1371.	1.12	12.00	46	0.00	0.00	0.00	242.
1.06	12.00	22	0.00	0.00	0.00	1279.	1.12	18.00	47	0.00	0.00	0.00	226.
1.06	18.00	23	0.00	0.00	0.00	1194.	1.13	0.00	48	0.00	0.00	0.00	211.
1.07	0.00	24	0.00	0.00	0.00	1114.	1.13	6.00	49	0.00	0.00	0.00	197.
1.07	6.00	25	0.00	0.00	0.00	1039.	1.13	12.00	50	0.00	0.00	0.00	184.

SUM 15.05 1.04 4.01 116142.  
( 382. )( 280. )( 102. )( 3288.77 )

CFS 24209. PEAN 24209. 0-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
C.MS 087. 24944. 10431. 7400. 116001. 3285.



McFARLAND-JOHNSON ENGINEERS, INC.

INCHES	3.01	8.01	11.76	15.20
AM	70.30	218.72	295.71	306.04
AC-FI	11377.	32590.	44509.	57521.
INJUS CU M	14034.	40199.	54902.	70951.

HYDROGRAPH AT STA				4 FOR PLAN 1, RII 1					
20.	19.	07.	317.	308.	309.	1822.	4854.	4324.	2373.
1360.	772.	477.	440.	410.	308.	362.	330.	315.	294.
274.	250.	239.	223.	208.	194.	181.	169.	158.	147.
137.	128.	119.	111.	104.	97.	90.	84.	79.	73.
69.	04.	00.	50.	52.	48.	45.	42.	39.	37.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	4854.	4589.	3286.	1490.	23200.
CAS	137.	130.	93.	42.	057.
INCHES		0.60	1.72	2.35	3.04
AM		15.27	43.74	59.74	77.21
AC-FI		2275.	6518.	8902.	11504.
INJUS CU M		2807.	8040.	10980.	14190.

HYDROGRAPH AT STA				4 FOR PLAN 1, RII 2					
35.	32.	110.	555.	539.	640.	3189.	8494.	7507.	4152.
2390.	1351.	336.	750.	727.	079.	033.	591.	551.	514.
480.	448.	418.	390.	304.	339.	317.	295.	270.	257.
240.	224.	209.	195.	182.	170.	150.	140.	130.	129.
120.	112.	104.	97.	91.	05.	79.	74.	09.	64.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	8494.	8031.	5751.	2018.	40600.
CAS	241.	227.	163.	74.	1150.
INCHES		1.05	3.01	4.12	5.32
AM		20.72	76.55	104.55	135.11
AC-FI		3982.	11406.	15576.	20132.
INJUS CU M		4912.	14070.	19216.	24833.

HYDROGRAPH AT STA				4 FOR PLAN 1, RII 3					
50.	46.	169.	793.	769.	922.	4550.	12134.	10810.	5932.
3414.	1930.	1194.	1114.	1039.	970.	905.	844.	788.	735.
600.	640.	597.	557.	520.	485.	452.	422.	394.	367.
343.	320.	298.	278.	260.	2.	220.	211.	197.	184.
171.	160.	149.	139.	130.	121.	113.	106.	98.	92.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	12134.	11472.	8215.	3740.	56000.
CAS	344.	325.	233.	106.	1042.
INCHES		1.50	4.31	5.88	7.60
AM		30.18	109.30	149.36	193.02
AC-FI		5689.	16295.	22455.	28701.
INJUS CU M		7017.	20099.	27451.	35470.

HYDROGRAPH AT STA				4 FOR PLAN 1, RII 4					
05.	00.	219.	1031.	1000.	1199.	5923.	15775.	14053.	7711.
4438.	2509.	1552.	1440.	1351.	1200.	1176.	1097.	1024.	955.

McFARLAND-JOHNSON ENGINEERS, INC.

091.	032.	170.	724.	075.	030.	008.	549.	512.	478.
440.	410.	300.	302.	330.	315.	294.	274.	250.	239.
223.	203.	194.	101.	109.	150.	147.	137.	120.	119.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	15775.	14914.	10680.	4802.	75401.
CMS	447.	422.	302.	130.	2135.
INCHES		1.95	5.60	7.64	9.88
MM		49.63	142.17	194.10	250.92
AC-FT		7395.	21183.	28931.	37389.
THOUS CU 4		9122.	26129.	35000.	40118.

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 5

79.	74.	270.	1209.	1231.	1475.	7290.	19415.	17290.	9490.
3403.	3088.	1910.	1782.	1063.	1551.	1447.	1351.	1260.	1170.
1097.	1023.	955.	091.	031.	170.	724.	075.	030.	588.
548.	512.	477.	440.	410.	388.	302.	330.	315.	294.
274.	250.	239.	223.	208.	194.	181.	169.	158.	147.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	19415.	18356.	13144.	5984.	92601.
CMS	550.	520.	372.	109.	2020.
INCHES		2.40	6.89	9.41	12.16
MM		61.09	174.97	238.97	308.83
AC-FT		9102.	26072.	35000.	40017.
THOUS CU 4		11227.	32159.	43921.	50761.

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 6

99.	93.	337.	1500.	1539.	1844.	9112.	24269.	21620.	11863.
6020.	3000.	2307.	2729.	2070.	1939.	1809.	1080.	1575.	1470.
1371.	1279.	1194.	1114.	1039.	970.	905.	844.	780.	735.
686.	640.	597.	557.	520.	485.	452.	422.	394.	307.
343.	320.	290.	270.	200.	242.	220.	211.	197.	104.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24269.	22944.	16431.	7480.	110001.
CMS	607.	650.	465.	212.	3205.
INCHES		3.01	8.01	11.76	15.20
MM		76.36	218.72	298.71	386.04
AC-FT		11377.	32590.	44510.	57521.
THOUS CU 4		14034.	40199.	54902.	70951.

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# SUB-AREA RUNOFF COMPUTATION

## BLACK CREEK INFLOW HYDROGRAPH

IS1W	ICOMP	IECOV	ITAPE	JPLT	JPRT	INARE	ISIAGE	IAU10
0	0	0	0	0	0	1	0	0

## HYDROGRAPH DATA

IN1-G	IUNG	TAREA	SNAP	IRSDA	IRSPC	ISNOW	ISAME	LOCAL

McFARLAND-JOHNSON ENGINEERS, INC.



1 -1 157.00 0.00 2400.00 0.00 0.000 0 1 0

PRECIP DATA  
R12 R24 R72 R96  
41.00 55.00 63.00 74.00 0.00 0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.925

LOSS DATA  
LHPT STRAK ULIKR RTIOL ERRAIN STRAS RTIUA SIRIL CNSTL ALSMX RTIMP  
0 0.00 0.00 0.00 1.00 0.00 0.00 1.00 0.10 0.00 0.00

100. 400. 900. 1300. 1700. 2300. 2800. 3100. 2600. 2000.  
1400.

GIVEN UNIF GRAPH, MUNGJE 12  
UNIT GRAPH TOTALS 19500. CFS OR 0.97 INCHES OVER THE AREA

RECESSION DATA  
SINFJ= -1.00 GRCSNE -0.10 RTIOL= 2.00

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW COMP Q	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.11	0.00	0.11	174.	1.07	12.00	26	0.00	0.00	0.00	1890.
1.01	12.00	2	0.50	0.00	0.50	163.	1.07	18.00	27	0.00	0.00	0.00	1769.
1.01	18.00	3	1.46	0.03	0.43	215.	1.08	0.00	28	0.00	0.00	0.00	1651.
1.02	0.00	4	0.17	0.00	0.17	393.	1.08	6.00	29	0.00	0.00	0.00	1540.
1.02	6.00	5	0.65	0.05	0.60	702.	1.08	12.00	30	0.00	0.00	0.00	1437.
1.02	12.00	6	2.85	2.25	0.60	1184.	1.08	18.00	31	0.00	0.00	0.00	1341.
1.02	18.00	7	8.34	7.74	0.60	2900.	1.09	0.00	32	0.00	0.00	0.00	1251.
1.03	0.00	8	0.98	0.38	0.60	6773.	1.09	6.00	33	0.00	0.00	0.00	1167.
1.03	6.00	9	0.00	0.00	0.00	11982.	1.09	12.00	34	0.00	0.00	0.00	1089.
1.03	12.00	10	0.00	0.00	0.00	18377.	1.09	18.00	35	0.00	0.00	0.00	1016.
1.03	18.00	11	0.00	0.00	0.00	20677.	1.10	0.00	36	0.00	0.00	0.00	948.
1.04	0.00	12	0.00	0.00	0.00	28229.	1.10	6.00	37	0.00	0.00	0.00	885.
1.04	6.00	13	0.00	0.00	0.00	30591.	1.10	12.00	38	0.00	0.00	0.00	825.
1.04	12.00	14	0.00	0.00	0.00	31828.	1.10	18.00	39	0.00	0.00	0.00	770.
1.04	18.00	15	0.00	0.00	0.00	25923.	1.11	0.00	40	0.00	0.00	0.00	719.
1.05	0.00	16	0.00	0.00	0.00	13712.	1.11	6.00	41	0.00	0.00	0.00	670.
1.05	6.00	17	0.00	0.00	0.00	13669.	1.11	12.00	42	0.00	0.00	0.00	626.
1.05	12.00	18	0.00	0.00	0.00	7546.	1.11	18.00	43	0.00	0.00	0.00	584.
1.05	18.00	19	0.00	0.00	0.00	3081.	1.12	0.00	44	0.00	0.00	0.00	545.
1.06	0.00	20	0.00	0.00	0.00	2874.	1.12	6.00	45	0.00	0.00	0.00	508.
1.06	6.00	21	0.00	0.00	0.00	2682.	1.12	12.00	46	0.00	0.00	0.00	474.
1.06	12.00	22	0.00	0.00	0.00	2502.	1.12	18.00	47	0.00	0.00	0.00	442.
1.06	18.00	23	0.00	0.00	0.00	2335.	1.13	0.00	48	0.00	0.00	0.00	413.
1.07	0.00	24	0.00	0.00	0.00	2178.	1.13	6.00	49	0.00	0.00	0.00	385.
1.07	6.00	25	0.00	0.00	0.00	2033.	1.13	12.00	50	0.00	0.00	0.00	359.

SUM 15.05 11.04 4.01 257833.  
( 382.)( 280.)( 102.)( 7301.02)

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
31628.	31110.	27937.	17842.	257570.
890.	881.	791.	505.	7294.
	1.55	5.56	10.65	12.81
	39.31	141.20	270.52	325.45
	15420.	55413.	106105.	127721.
	19028.	64350.	130954.	157541.



HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 1									
35.	33.	43.	79.	140.	237.	500.	1355.	2396.	3275.
4135.	5240.	0110.	0320.	5185.	3942.	2734.	1509.	010.	575.
530.	500.	407.	430.	407.	379.	354.	330.	300.	287.
200.	200.	233.	210.	203.	190.	177.	105.	154.	144.
134.	125.	117.	109.	102.	95.	86.	83.	77.	72.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	0326.	0222.	5587.	3508.	51514.
CMS	179.	170.	150.	101.	1459.
INCHES		0.31	1.11	2.13	2.56
MM		7.80	28.24	54.10	65.09
AC-FI		3085.	11083.	21233.	25544.
THOUS CU A		3800.	13670.	26190.	31506.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 2									
61.	57.	15.	137.	240.	414.	1015.	2371.	4194.	5732.
7237.	9180.	10707.	11070.	9073.	0899.	4764.	2641.	1078.	1006.
939.	870.	017.	762.	711.	004.	619.	578.	539.	503.
409.	438.	409.	301.	350.	332.	310.	209.	270.	252.
235.	219.	204.	191.	178.	100.	155.	144.	135.	126.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	11070.	10930.	9770.	0245.	90149.
CMS	313.	308.	277.	177.	2553.
INCHES		0.54	1.95	3.73	4.48
MM		13.70	49.42	94.68	113.91
AC-FI		5399.	19394.	37158.	44702.
THOUS CU A		6060.	23923.	45033.	55139.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 3									
07.	81.	107.	190.	351.	592.	1450.	3300.	5991.	8100.
10339.	13114.	15290.	15814.	12961.	9800.	0834.	3773.	1540.	1437.
1341.	1251.	1107.	1009.	1016.	948.	085.	625.	770.	719.
070.	020.	004.	540.	500.	474.	442.	413.	385.	359.
335.	313.	292.	272.	254.	237.	221.	200.	193.	180.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	15814.	15555.	13969.	8921.	128785.
CMS	440.	440.	390.	253.	3047.
INCHES		0.77	2.70	5.33	6.41
MM		19.65	70.00	135.26	162.72
AC-FI		7713.	27706.	53082.	63800.
THOUS CU A		9514.	34175.	65476.	78771.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 4									
113.	100.	140.	255.	450.	770.	1805.	4402.	7780.	10645.
13440.	17049.	19804.	20550.	16850.	12813.	8805.	4905.	2002.	1868.
1743.	1027.	1510.	1410.	1321.	1233.	1150.	1073.	1001.	934.
072.	013.	759.	700.	661.	510.	575.	537.	501.	467.
430.	407.	379.	354.	330.	308.	286.	200.	250.	234.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	20550.	20221.	18159.	11597.	167420.
CMS	502.	573.	514.		4741.

McFARLAND-JOHNSON ENGINEERS, INC.

INCHES	1.01	3.01	6.92	8.33
4M	25.55	91.78	175.84	211.54
AC-FT	10027.	36016.	69007.	83018.
THOUS CU M	12368.	44428.	55119.	102402.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 5									
140.	130.	172.	314.	562.	947.	2320.	5410.	9585.	13102.
16542.	20983.	24473.	25303.	20738.	15770.	10935.	6037.	2405.	2300.
2140.	2002.	1800.	1743.	1626.	1517.	1410.	1321.	1232.	1150.
1073.	1001.	934.	871.	813.	759.	706.	650.	610.	575.
530.	500.	407.	430.	407.	379.	354.	330.	306.	287.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	25303.	24888.	22350.	14273.	206056.
CMS	716.	705.	633.	404.	5835.
INCHES		1.24	4.45	8.52	10.25
4M		31.45	112.96	216.41	260.36
AC-FT		12341.	44330.	84932.	102176.
THOUS CU M		15223.	54680.	104762.	126033.

HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 6									
174.	163.	215.	393.	702.	1184.	2900.	6773.	11982.	16377.
20677.	26229.	30591.	31628.	25923.	19712.	13669.	7546.	3081.	2674.
2682.	2502.	2335.	2178.	2033.	1890.	1769.	1651.	1540.	1437.
1341.	1251.	1167.	1089.	1016.	948.	865.	825.	770.	719.
670.	620.	584.	545.	508.	474.	442.	413.	385.	359.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	31628.	31110.	27937.	17842.	257570.
CMS	890.	881.	791.	505.	7294.
INCHES		1.55	5.56	10.65	12.81
4M		39.31	141.20	270.52	325.45
AC-FT		15426.	55413.	106165.	127721.
THOUS CU M		19028.	68350.	130952.	157541.

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# COMBINE HYDROGRAPHS

## COMBINE FLOODS AT CONFLUENCE OF BLACK CREEK

ISTAD	ICOMP	IECON	ITAPE	JPLI	JPRT	INAME	ISIAGE	IAUTD
4	5	0	0	0	0	1	0	0

SUM OF 5 HYDROGRAPHS AT 4 PLAN 1 RTIO 1									
254.	244.	319.	833.	1959.	3065.	6219.	16590.	33188.	43227.
43565.	38353.	31548.	25228.	19024.	14385.	10394.	7298.	5620.	5046.
4014.	4262.	3950.	3684.	3434.	3202.	2987.	2787.	2600.	2426.
2264.	2112.	1971.	1839.	1715.	1601.	1493.	1393.	1300.	1213.
1132.	1050.	985.	919.	858.	800.	747.	697.	650.	607.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME

McFARLAND-JOHNSON ENGINEERS, INC.

CFS	43500.	43390.	39375.	24050.	305239.
CAS	1234.	1229.	1115.	061.	10342.
INCHES		0.17	0.01	1.12	1.42
MA		4.27	15.51	28.44	35.97
AC-FI		21519.	75105.	143100.	151110.
INJUS CU #		26543.	96342.	170590.	223395.

SUM OF 5 HYDROGRAPHS AT					4 PLAN 1 RIIO 2				
444.	427.	559.	1450.	3429.	5303.	10883	29032.	56079.	75047.
70239.	07110.	55209.	44149.	33292.	25180.	10190.	12771.	9830.	8831.
8075.	7459.	0926.	0446.	0009.	5094.	5228.	4877.	4550.	4246.
3961.	3090.	3440.	3218.	3002.	2801.	2613.	2438.	2275.	2123.
1901.	1048.	1724.	1009.	1501.	1401.	1307.	1219.	1138.	1061.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	70239.	75943.	68912.	42105.	639100.
CAS	2159.	2150.	1951.	1192.	18099.
INCHES		0.29	1.07	1.90	2.48
MA		7.48	27.15	49.70	62.95
AC-FI		37058.	130085.	250544.	316943.
INJUS CU #		46450.	163098.	309041.	390943.

SUM OF 5 HYDROGRAPHS AT					4 PLAN 1 RIIO 3				
034.	010.	799.	2082.	4098.	7552.	15547.	41475.	52970.	108007.
108913.	95882.	70009.	63069.	47560.	35971.	25965.	10244.	14051.	12015.
11530.	10056.	9094.	9211.	8739.	8007.	9073.	10010.	11204.	11342.
11130.	10700.	10156.	9567.	8973.	0390.	7846.	7326.	6830.	0301.
5955.	5500.	5104.	4837.	4513.	4211.	3929.	3000.	3420.	3191.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	108913.	108490.	98445.	60150.	997510.
CAS	3004.	3072.	2768.	1703.	26246.
INCHES		0.42	1.53	2.80	3.87
MA		10.09	36.78	71.09	98.25
AC-FI		53797.	195204.	357920.	494633.
INJUS CU #		66357.	240854.	441488.	610121.

SUM OF 5 HYDROGRAPHS AT					4 PLAN 1 RIIO 4				
824.	793.	1030.	2707.	6368.	9960.	20211.	53917.	107861.	140487.
141506.	124647.	102530.	83020.	67000.	58619.	51390.	44131.	38891.	35801.
32727.	29969.	27575.	25490.	23047.	21989.	20477.	19086.	17797.	16601.
15460.	14448.	13480.	12577.	11735.	10949.	10216.	9531.	8693.	8298.
7742.	7224.	0740.	6288.	5867.	5474.	5108.	4766.	4447.	4149.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	141506.	141037.	127979.	83752.	1498071.
CAS	4009.	3994.	3624.	2372.	42421.
INCHES		0.55	1.98	3.90	5.81
MA		13.89	50.42	98.99	147.55
AC-FI		69936.	253043.	498358.	742845.
INJUS CU #		80264.	313110.	614715.	910286.



SUM OF 5 HYDROGRAPHS AT					4 PLAN 1 RILL 5				
1015.	970.	1270.	3331.	7537.	12259.	24075.	00300.	132752.	172907.
174200.	154509.	135394.	127517.	118034.	103954.	05305.	07030.	55532.	48200.
42430.	37901.	34483.	31039.	29233.	27125.	25232.	23504.	21911.	20430.
19062.	17783.	16591.	15400.	14443.	13470.	12573.	11731.	10945.	10212.
9529.	0090.	0295.	7740.	7221.	0730.	0207.	5000.	0473.	5100.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	114250.	173584.	153952.	115452.	1990632.
CAS	4934.	4915.	4501.	3209.	50595.
InCh2S		0.07	2.47	5.37	7.75
MA		17.10	62.02	130.45	190.05
AC-FI		00074.	315270.	086907.	991057.
InDUS CU A		106171.	308889.	047355.	1222451.

SUM OF 5 HYDROGRAPHS AT					4 PLAN 1 RILL 6				
1200.	1220.	1597.	4104.	9797.	15324.	31093.	02949.	105940.	216134.
217820.	203636.	205005.	205274.	183953.	150652.	110046.	00050.	70559.	60394.
52512.	47520.	42909.	39477.	35499.	33003.	31520.	29374.	27306.	25542.
23020.	22220.	20739.	19350.	18053.	16044.	15710.	14054.	13002.	12700.
11911.	11113.	10309.	9075.	9027.	0422.	7000.	7332.	0041.	0303.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	217620.	216779.	209933.	150336.	2000040.
CAS	0100.	6144.	5945.	4404.	75494.
InCh2S		0.04	3.20	7.37	10.34
MA		21.37	92.71	157.14	262.50
AC-FI		107593.	410396.	942103.	1322096.
InDUS CU A		132714.	513617.	1102141.	1030070.

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# HYDROGRAPH ROUTING

ROUTE COMBINE FLOWS TO COURT STREET DAM OUTLET USING MUSKINGUM METHOD

ISIAQ	ICORP	IECOV	ITAPE	JPLI	JPRT	INAME	ISTAGE	IAUTO
5	1	0	0	0	0	1	0	0

ROUTING DATA				
GLOSS	CLOSS	AVG	IRIS	ISANE
0.0	0.000	0.00	0	1

ISIPS	MSIDL	LWS	ANSKA	X	ISK	STORA	ISPRAT
1	0	0	6.930	0.010	0.000	0.	0

STATION 5, PLAN 1, RILL 1

OUTFLOW								
204.	251.	209.	452.	1019.	1929.	3554.	8250.	10201.
30277.	21940.	30954.	11700.	25952.	20359.	15539.	11400.	0554.
5500.	4000.	4400.	4052.	3754.	3490.	3251.	3031.	2627.

McFARLAND - JOHNSON ENGINEERS, INC.

1230. 1140. 1071. 999. 932. 870. 812. 757. 707. 659.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	39945.	39111.	36556.	25728.	364771.
CMS	1131.	1108.	1035.	672.	10329.
INCHES		0.15	0.57	1.10	1.41
MM		3.85	14.10	28.04	35.93
AC-FI		19394.	72512.	141190.	180678.
THOUS CU M		23922.	89442.	174155.	223110.

STATION 5, PLAN 1, RTIO 2

OUTFLOW									
444.	439.	471.	792.	1783.	3359.	6219.	14451.	31956.	53073.
00904.	09905.	04009.	55620.	45415.	35628.	27193.	20104.	14770.	11469.
9039.	8504.	7710.	7091.	6509.	0108.	5690.	5304.	4947.	4615.
4300.	4017.	3748.	3497.	3263.	3044.	2841.	2650.	2473.	2307.
2153.	2009.	1874.	1749.	1631.	1522.	1420.	1325.	1236.	1154.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	69905.	68445.	63977.	41524.	638350.
CMS	1979.	1938.	1812.	1176.	18076.
INCHES		0.27	0.99	1.93	2.48
MM		6.74	25.20	49.08	62.87
AC-FI		33939.	126890.	247082.	316537.
THOUS CU M		41864.	156524.	304772.	390443.

STATION 5, PLAN 1, RTIO 3

OUTFLOW									
034.	627.	673.	1131.	2547.	4799.	8684.	20644.	45652.	75818.
95092.	99864.	92305.	79465.	64879.	50897.	38847.	28720.	21100.	16384.
13.	12149.	11014.	10130.	9430.	9048.	9177.	9700.	10456.	10952.
111.	11001.	10050.	10177.	9029.	9059.	8492.	7944.	7423.	6931.
6470.	6038.	5634.	5257.	4905.	4577.	4271.	3965.	3718.	3469.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	99864.	97778.	91396.	59319.	994239.
CMS	2820.	2769.	2588.	1680.	28154.
INCHES		0.38	1.42	2.76	3.86
MM		9.63	36.01	70.11	97.92
AC-FI		48485.	181280.	352975.	493011.
THOUS CU M		59805.	223606.	435388.	608120.

STATION 5, PLAN 1, RTIO 4

OUTFLOW									
824.	815.	875.	1470.	3311.	6239.	11550.	26838.	59348.	98564.
124400.	129823.	120100.	103611.	86321.	72073.	61738.	53284.	46157.	40818.
30851.	33522.	30649.	28159.	25987.	24070.	22354.	20798.	19373.	18059.
16840.	15708.	14054.	13671.	12750.	11901.	11104.	10360.	9666.	9019.
6415.	7051.	7326.	6835.	6377.	5950.	5552.	5180.	4833.	4509.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME  
McFARLAND-JOHNSON ENGINEERS, INC.

CFS	129823.	127111.	118852.	82437.	1493819.
CMS	3676.	3599.	3366.	2334.	42300.
INCHES		0.49	1.84	3.84	5.79
MM		12.52	46.82	97.43	147.13
AC-FT		63030.	235740.	490535.	740737.
THOUS CU M		77747.	290781.	605066.	913685.

# STATION 5, PLAN 1, R110 5

OUTFLOW									
1015.	1003.	1070.	1809.	4075.	7678.	14215.	33031.	73043.	121309.
153107.	160126.	151046.	139181.	129265.	118247.	104031.	87470.	71867.	59748.
51009.	44468.	39481.	35595.	32473.	29875.	27639.	25661.	23875.	22241.
20734.	19336.	18037.	16827.	15699.	14647.	13660.	12751.	11897.	11100.
10357.	9063.	9016.	8412.	7849.	7323.	6833.	6375.	5948.	5550.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	160126.	156617.	148631.	113119.	1993399.
CMS	4534.	4435.	4209.	3203.	56447.
INCHES		0.61	2.31	5.26	7.73
MM		15.43	58.56	133.69	196.33
AC-FT		77661.	294305.	673103.	988462.
THOUS CU M		95794.	363637.	830260.	1219250.

# STATION 5, PLAN 1, R110 6

OUTFLOW									
1266.	1254.	1346.	2262.	5093.	9598.	17769.	41289.	91306.	151636.
191384.	203316.	204236.	205943.	200134.	180332.	152189.	122246.	96432.	77668.
64933.	55957.	49414.	44401.	40543.	37305.	34523.	32060.	29635.	27796.
25915.	24169.	22546.	21033.	19624.	18309.	17082.	15938.	14871.	13875.
12940.	12079.	11270.	10515.	9811.	9154.	8541.	7969.	7435.	6938.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	205943.	205090.	202314.	155308.	2659505.
CMS	5832.	5807.	5729.	4398.	75309.
INCHES		0.80	3.14	7.23	10.31
MM		20.20	79.70	183.56	261.94
AC-FT		10.697.	401283.	924147.	1318763.
THOUS CU M		125442.	494975.	1139918.	1626670.

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## SUB-AREA RUNOFF COMPUTATION

## LOCAL INFLOW HYDROGRAPH AT OUTLET OF COURT STREET DAM

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
5	0	0	0	0	0	1	0	0

## HYDROGRAPH DATA

INHD	IUNG	TAREA	SNAP	TRSDA	TRSPC	KATIO	ISHGW	ISAME	LOCAL
1	-1	61.00	0.00	2460.00	0.00	0.00	0	1	0

McFARLAND-JOHNSON ENGINEERS, INC.



TRSPC COMPUTED BY THE PROGRAM IS 0.925

PRECIP DATA									
R12	R24	R48	R72	R96					
0.00	22.00	41.00	55.00	63.00	74.00	0.00	0.00	0.00	0.00
LOSS DATA									
LRDPY	SIMR	ULFKR	RILOL	ERALM	SIRKS	RIPOK	STRIL	CNSIL	ALSMA
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00
1500.	2800.	1100.	600.	400.	200.	100.	100.	100.	100.
RECESSION DATA									
MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-JF-PERIOD FLOW COMP 3	HR.MN	PERIOD	RAIN
0	0	0	0	0	0	0	0	0	0
1.01	6.00	1	0.11	0.00	0.11	114.	1.07	12.00	26
1.01	12.00	2	0.50	0.00	0.50	106.	1.07	18.00	27
1.01	18.00	3	1.46	0.63	0.83	1040.	1.08	0.00	28
1.02	0.00	4	0.17	0.00	0.17	1849.	1.08	6.00	29
1.02	6.00	5	0.65	0.05	0.60	853.	1.08	12.00	30
1.02	12.00	6	2.85	2.25	0.60	3971.	1.08	18.00	31
1.02	18.00	7	8.34	7.74	0.60	18285.	1.09	0.00	32
1.03	0.00	8	0.98	0.34	0.60	24934.	1.09	6.00	33
1.03	6.00	9	0.00	0.00	0.00	11085.	1.09	12.00	34
1.03	12.00	10	0.00	0.00	0.00	6091.	1.09	18.00	35
1.03	18.00	11	0.00	0.00	0.00	3833.	1.10	0.00	36
1.04	0.00	12	0.00	0.00	0.00	2447.	1.10	6.00	37
1.04	6.00	13	0.00	0.00	0.00	2283.	1.10	12.00	38
1.04	12.00	14	0.00	0.00	0.00	2130.	1.10	18.00	39
1.04	18.00	15	0.00	0.00	0.00	1988.	1.11	0.00	40
1.05	0.00	16	0.00	0.00	0.00	1855.	1.11	6.00	41
1.05	6.00	17	0.00	0.00	0.00	1730.	1.11	12.00	42
1.05	12.00	18	0.00	0.00	0.00	1615.	1.11	18.00	43
1.05	18.00	19	0.00	0.00	0.00	1508.	1.12	0.00	44
1.06	0.00	20	0.00	0.00	0.00	1406.	1.12	6.00	45
1.06	6.00	21	0.00	0.00	0.00	1311.	1.12	12.00	46
1.06	12.00	22	0.00	0.00	0.00	1224.	1.12	18.00	47
1.06	18.00	23	0.00	0.00	0.00	1142.	1.13	0.00	48
1.07	0.00	24	0.00	0.00	0.00	1065.	1.13	6.00	49
1.07	6.00	25	0.00	0.00	0.00	994.	1.13	12.00	50
SUM 15.05 11.04 4.01 106237.									
( 382.)( 280.)( 102.)( 3008.30)									

TOTAL VOLUME									
PEAN	6-HOUR	24-HOUR	72-HOUR	THOUS CU M					
24934.	21610.	14829.	6661.	106093.					
706.	612.	420.	199.	3004.					
INCHES	3.30	9.05	12.23	16.18					
MM	83.70	229.75	310.55	410.94					
AC-FT	10710.	29412.	39750.	52606.					
THOUS CU M	13218.	36280.	49038.	64891.					

HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 1  
 20K. 21. 23. 2413. 4987. 1218.  
 370. 794. 3657.  
 MCFARLAND-JOHNSON ENGINEERS, INC.

707.	489.	457.	420.	398.	371.	346.	323.	301.	281.
202.	245.	220.	213.	199.	185.	173.	161.	151.	141.
131.	122.	114.	107.	99.	93.	87.	81.	75.	70.
06.	01.	57.	53.	50.	40.	43.	40.	30.	35.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	4987.	4322.	2966.	1336.	21219.
CMS	141.	122.	84.	38.	601.
INCHES		0.66	1.81	2.45	3.24
MM		16.74	45.95	62.11	82.19
AC-FT		2143.	5882.	7951.	10522.
THOUS CU M		2644.	7256.	9808.	12978.

# HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 2

40.	37.	304.	647.	398.	1390.	6400.	8727.	3873.	2132.
1342.	857.	799.	740.	696.	649.	606.	565.	527.	492.
459.	428.	400.	373.	348.	325.	303.	283.	264.	246.
230.	214.	200.	186.	174.	162.	151.	141.	132.	123.
115.	107.	100.	93.	87.	81.	76.	71.	66.	61.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	8727.	7563.	5190.	2338.	37133.
CMS	247.	214.	147.	66.	1051.
INCHES		1.15	3.17	4.28	5.60
MM		29.30	80.41	108.69	143.83
AC-FT		3750.	10294.	13915.	18413.
THOUS CU M		4626.	12698.	17163.	22712.

# HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 3

57.	53.	520.	925.	426.	1986.	9143.	12467.	5532.	3045.
1917.	1224.	1142.	1065.	994.	927.	865.	807.	753.	703.
656.	612.	571.	533.	497.	464.	433.	404.	377.	351.
328.	306.	285.	260.	248.	232.	216.	202.	188.	176.
164.	153.	143.	133.	124.	116.	108.	101.	94.	88.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	12467.	10805.	7414.	3341.	53047.
CMS	353.	306.	210.	95.	1502.
INCHES		1.65	4.52	6.11	8.09
MM		41.85	114.88	155.28	205.47
AC-FT		5358.	14706.	19878.	26304.
THOUS CU M		6609.	18140.	24519.	32446.

# HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 4

74.	69.	670.	1202.	554.	2581.	11885.	16207.	7192.	3959.
2492.	1591.	1484.	1385.	1292.	1200.	1125.	1049.	979.	914.
852.	795.	742.	692.	646.	603.	562.	525.	490.	457.
426.	398.	371.	346.	323.	301.	281.	262.	245.	228.
213.	199.	180.	173.	162.	151.	141.	131.	122.	114.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	16207.	14046.	9639.	4343.	66960.
CMS	459.	398.	273.	123.	1953.
INCHES		2.14	5.88	7.95	10.52
MM		54.41	149.34	205.69	267.11



AC-FI  
INJUS CU M

0905.	19118.	25041.	34195.
0591.	23582.	31075.	42179.

HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 5

91.	85.	832.	1479.	682.	3177.	14626.	19947.	8852.	4873.
3067.	1950.	1827.	1704.	1590.	1484.	1384.	1292.	1205.	1124.
1049.	979.	913.	852.	795.	742.	692.	646.	604.	502.
525.	489.	457.	420.	398.	371.	346.	323.	301.	281.
262.	245.	220.	213.	199.	185.	173.	161.	151.	141.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	19947.	17286.	11863.	5345.	84874.
CMS	505.	490.	336.	151.	2403.
INCHES		2.04	7.24	9.78	12.94
MM		66.96	183.80	248.44	328.75
AC-FI		8572.	23530.	31805.	42086.
INJUS CU M		10574.	29024.	39231.	51913.

HYDROGRAPH AT STA 5 FOR PLAN 1, RTIO 6

114.	100.	1040.	1649.	853.	3971.	18285.	24934.	11005.	6091.
3033.	2447.	2203.	2130.	1988.	1855.	1730.	1615.	1506.	1406.
1311.	1224.	1142.	1005.	994.	927.	805.	807.	753.	703.
656.	612.	571.	533.	497.	464.	433.	404.	377.	351.
320.	300.	285.	266.	240.	232.	216.	202.	180.	176.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24934.	21610.	14829.	6681.	106093.
CMS	700.	612.	420.	189.	3004.
INCHES		3.30	9.05	12.23	16.18
MM		83.70	229.75	310.55	410.94
AC-FI		10710.	29412.	39756.	52608.
INJUS CU M		13216.	36260.	49038.	64891.

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# COMBINE HYDROGRAPHS

TOTAL OUTFLOW AT COURT STREET DAM

ISTAU	ICOMP	IECDM	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
5	2	0	0	0	0	1	0	0

SUM OF 2 HYDROGRAPHS AT 5 PLAN 1 RTIO 1

276.	272.	477.	822.	1189.	2714.	7211.	13245.	20474.	31545.
39043.	40435.	37411.	32212.	26349.	20730.	15885.	11811.	8741.	6835.
5770.	5104.	4634.	4265.	3953.	3676.	3424.	3193.	2978.	2778.
2592.	2418.	2256.	2105.	1964.	1832.	1710.	1595.	1488.	1389.
1296.	1209.	1128.	1052.	982.	916.	855.	798.	744.	694.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	40435.	39739.	37192.	24700.	385990.
CMS	1145.	1125.	1053.		10930.

McFARLAND-JOHNSON ENGINEERS, INC.



INCHES	0.15	0.50	1.12	1.40
MM	3.82	14.29	28.54	37.07
AC-FI	19705.	73769.	147330.	191400.
THOUS CU M	24300.	90993.	181729.	236088.

SUM OF 2 HYDROGRAPHS AT					5 PLAN 1 RTIO 2				
484.	470.	835.	1439.	2081.	4749.	12619.	23178.	35829.	55205.
68320.	70701.	85408.	56371.	40111.	36277.	27799.	20669.	15297.	11901.
10098.	6933.	8110.	7464.	0917.	6433.	5993.	5587.	5211.	4861.
4535.	4231.	3948.	3004.	3437.	3207.	2992.	2792.	2605.	2430.
2268.	2110.	1974.	1042.	1718.	1003.	1496.	1396.	1302.	1215.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	70701.	09544.	65086.	43329.	675482.
CMS	2004.	1909.	1843.	1227.	19128.
INCHES		0.26	0.98	1.97	2.55
MM		6.68	25.01	49.94	64.88
AC-FI		34484.	129096.	257028.	334950.
THOUS CU M		42536.	159238.	318026.	413154.

SUM OF 2 HYDROGRAPHS AT					5 PLAN 1 RTIO 3				
691.	080.	1193.	2055.	2973.	0784.	10027.	33111.	51194.	70804.
97009.	101087.	93520.	80530.	05873.	51824.	39712.	29528.	21853.	17087.
14420.	12761.	11505.	10602.	9927.	9511.	9610.	10163.	10833.	11304.
11454.	11307.	10941.	10443.	9878.	9291.	6708.	8146.	7011.	7107.
0034.	6191.	5777.	5391.	5030.	4093.	4379.	4085.	3812.	3557.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	101087.	99348.	92980.	61899.	1047280.
CMS	2862.	2813.	2033.	1753.	29650.
INCHES		0.38	1.41	2.81	3.96
MM		9.54	35.72	71.34	100.59
AC-FI		49203.	184423.	308325.	519315.
THOUS CU M		60766.	227482.	454322.	640506.

SUM OF 2 HYDROGRAPHS AT					5 PLAN 1 RTIO 4				
898.	884.	1551.	2072.	3865.	8820.	23435.	43045.	60540.	102523.
126091.	131414.	121584.	104996.	87613.	73279.	62803.	54333.	47137.	41731.
37704.	34318.	31391.	28651.	26633.	24073.	22917.	21323.	19803.	18516.
17207.	10106.	15025.	14017.	13078.	12202.	11385.	10622.	9911.	9247.
8020.	8050.	7511.	7008.	6539.	6101.	5692.	5311.	4955.	4624.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	131414.	129152.	120912.	85130.	1502779.
CMS	3721.	3657.	3424.	2411.	44253.
INCHES		0.49	1.83	3.86	5.91
MM		12.40	46.45	98.12	150.10
AC-FI		64043.	239826.	506558.	774932.
THOUS CU M		78995.	295020.	624830.	955804.



SUM OF 2 HYDROGRAPHS AT					5 PLAN 1 RTIO 5							
1100.	1088.	1909.	3209.	4757.	10555.	28843.	52976.	81095.	126182.			
156174.	102084.	152073.	140885.	130850.	119730.	105415.	68762.	73072.	60673.			
52058.	45447.	40395.	30447.	33208.	30617.	28331.	26306.	24477.	22803.			
21250.	19020.	16494.	17253.	16097.	15018.	14012.	13074.	12190.	11381.			
10019.	9908.	9244.	8625.	8048.	7509.	7006.	6537.	6099.	5691.			
		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME						
		CFS	162084.	159129.	151166.	116238.	2076273.					
		CMS	4590.	4506.	4281.	3291.	58850.					
		INCHES		0.60	2.29	5.27	7.86					
		MM		15.28	58.08	133.97	199.01					
		AC-FI		78907.	299833.	891663.	1030549.					
		THOUS CU M		97330.	369839.	853153.	1271103.					

SUM OF 2 HYDROGRAPHS AT					5 PLAN 1 RTIO 6							
1382.	1360.	2380.	4111.	5946.	13509.	36054.	66223.	102360.	157727.			
195217.	205763.	200519.	208074.	202122.	102247.	153920.	123801.	97930.	79073.			
66245.	57180.	50556.	45526.	41537.	36232.	35388.	32867.	30582.	28499.			
20570.	24781.	23116.	21506.	20121.	18773.	17515.	16342.	15240.	14227.			
13274.	12385.	11555.	10782.	10060.	9386.	8757.	8171.	7621.	7113.			
		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME						
		CFS	208074.	207297.	204757.	159034.	2765598.					
		CMS	5892.	5870.	5798.	4503.	78313.					
		INCHES		0.78	3.10	7.22	10.46					
		MM		19.91	78.67	183.30	265.63					
		AC-FI		102792.	400129.	946317.	1371371.					
		THOUS CU M		126792.	500952.	1167204.	1691561.					

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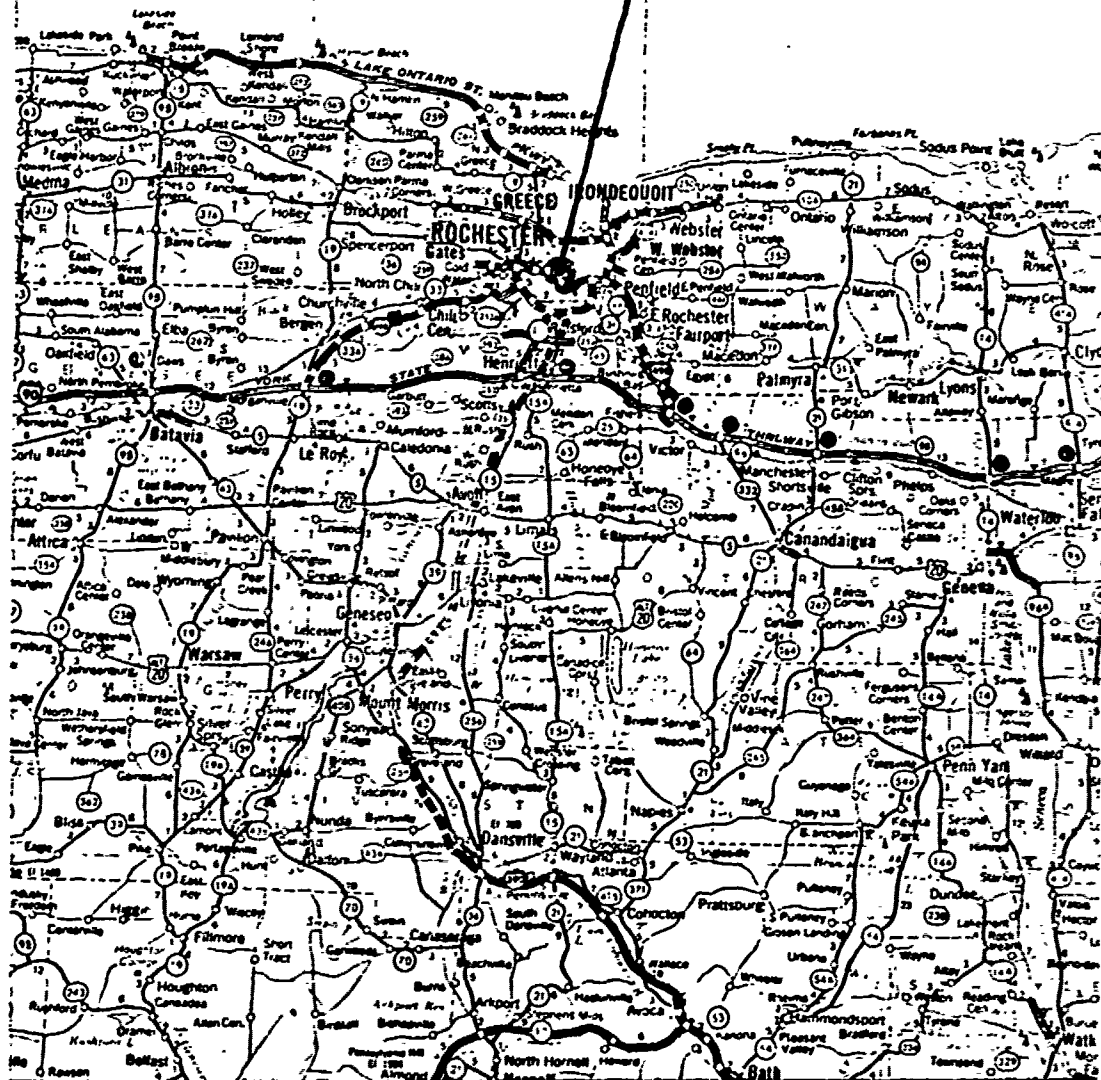
PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS  
 FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)  
 AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS					
				RATIO 1 0.20	RATIO 2 0.35	RATIO 3 0.50	RATIO 4 0.65	RATIO 5 0.80	RATIO 6 1.00
HYDROGRAPH AT	1	1075.00 ( 2784.24)	1	48796. ( 1301.75)	85393. ( 2418.06)	121990. ( 3454.37)	150587. ( 4490.68)	195184. ( 5520.99)	243980. ( 6908.74)
ROUTED TO	2	1075.00 ( 2784.24)	1	0. ( 0.00)	0. ( 0.00)	5962. ( 168.82)	25274. ( 715.69)	71366. ( 2020.87)	150290. ( 4425.63)
HYDROGRAPH AT	2	335.00 ( 867.05)	1	16399. ( 404.38)	28699. ( 812.66)	40998. ( 1160.94)	53298. ( 1509.22)	65597. ( 1857.51)	81997. ( 2321.88)
2 COMBINED	2	1410.00 ( 3651.88)	1	16399. ( 404.38)	28699. ( 812.66)	40998. ( 1160.94)	53298. ( 1509.22)	93745. ( 2654.55)	190555. ( 5565.83)
ROUTED TO	3	1410.00 ( 3651.88)	1	12359. ( 349.90)	21627. ( 612.42)	30090. ( 874.89)	40165. ( 1137.35)	69218. ( 1960.05)	127001. ( 3597.97)
HYDROGRAPH AT	3	256.00 ( 663.04)	1	9940. ( 261.40)	17394. ( 492.55)	24849. ( 703.64)	32303. ( 914.73)	39758. ( 1125.62)	49098. ( 1407.28)
2 COMBINED	3	1666.00 ( 4314.92)	1	16252. ( 510.84)	31941. ( 904.46)	45630. ( 1292.09)	59319. ( 1679.72)	73180. ( 2072.23)	135829. ( 3846.26)
ROUTED TO	4	1666.00 ( 4314.92)	1	16252. ( 510.84)	31941. ( 904.46)	45630. ( 1292.09)	59319. ( 1679.72)	73180. ( 2072.23)	135829. ( 3846.26)
HYDROGRAPH AT	4	260.00 ( 673.40)	1	12816. ( 362.92)	22429. ( 635.11)	32041. ( 907.30)	41053. ( 1179.49)	51206. ( 1451.68)	64082. ( 1814.61)
HYDROGRAPH AT	4	215.00 ( 556.65)	1	8839. ( 250.29)	15468. ( 438.01)	22098. ( 625.73)	28727. ( 813.45)	35356. ( 1001.17)	44195. ( 1251.47)
HYDROGRAPH AT	4	71.00 ( 183.89)	1	4854. ( 137.44)	8494. ( 240.53)	12134. ( 343.61)	15775. ( 446.69)	19415. ( 549.77)	24269. ( 687.22)
HYDROGRAPH AT	4	187.00 ( 484.33)	1	6326. ( 179.12)	11070. ( 313.47)	15814. ( 447.81)	20558. ( 582.15)	25303. ( 716.49)	31628. ( 895.61)
5 COMBINED	4	2399.00 ( 6213.38)	1	43565. ( 1233.62)	76239. ( 2158.84)	108913. ( 3084.06)	141586. ( 4009.28)	174260. ( 4934.49)	217825. ( 6168.12)
ROUTED TO	5	2399.00 ( 6213.38)	1	39945. ( 1131.13)	69905. ( 1979.46)	99864. ( 2827.82)	129623. ( 3676.17)	160126. ( 4534.26)	205943. ( 5831.66)
HYDROGRAPH AT	5	61.00 ( 157.99)	1	4987. ( 141.21)	8727. ( 247.12)	12467. ( 353.03)	16207. ( 458.94)	19947. ( 564.85)	24934. ( 706.06)
2 COMBINED	5	2460.00 ( 6371.37)	1	40435. ( 1144.99)	70761. ( 2003.73)	101087. ( 2862.47)	131414. ( 3721.22)	162084. ( 4589.70)	208074. ( 5891.99)

APPENDIX D

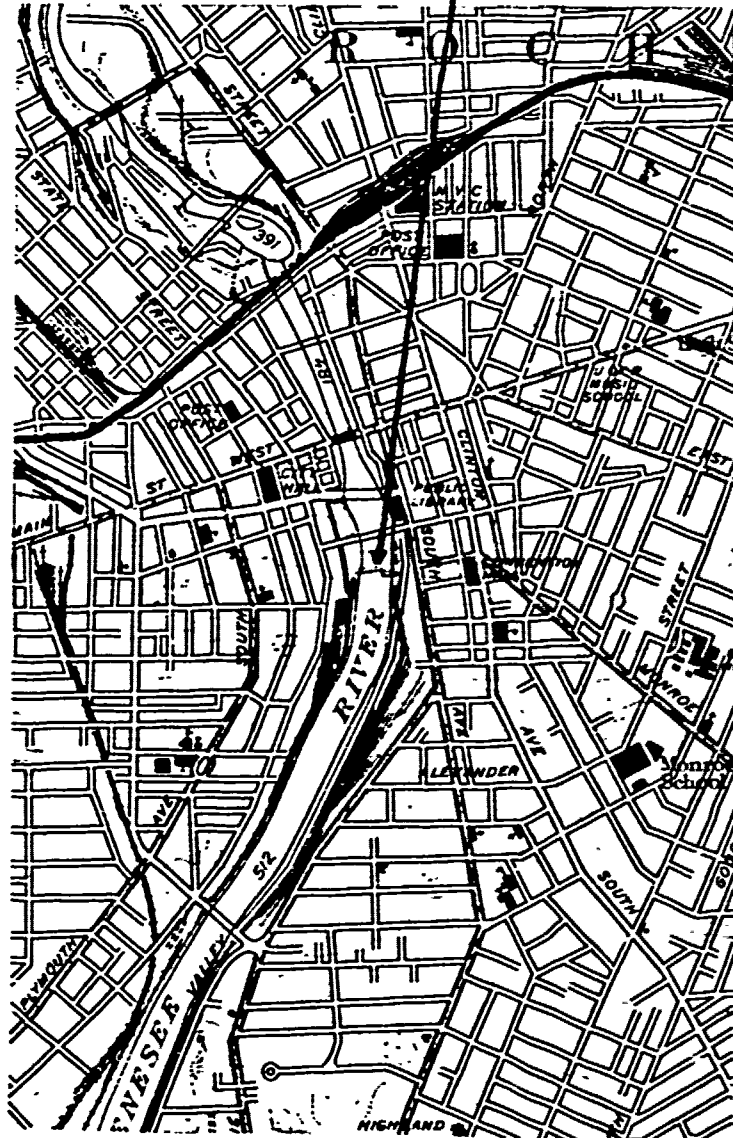
DRAWINGS

DAM SITE

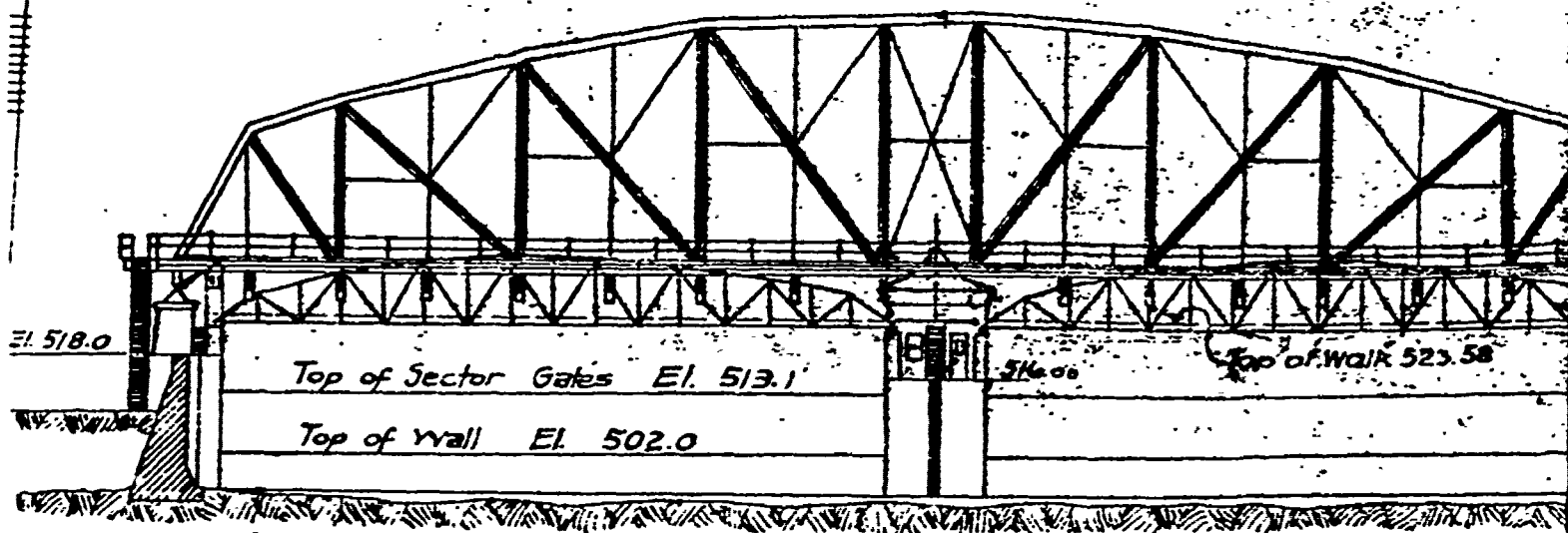


VICINITY MAP  
COURT STREET DAM  
I.D. NO. N.Y. 683

DAM SITE



TOPOGRAPHIC MAP  
COURT STREET DAM  
I.D. NO. N.Y. 683



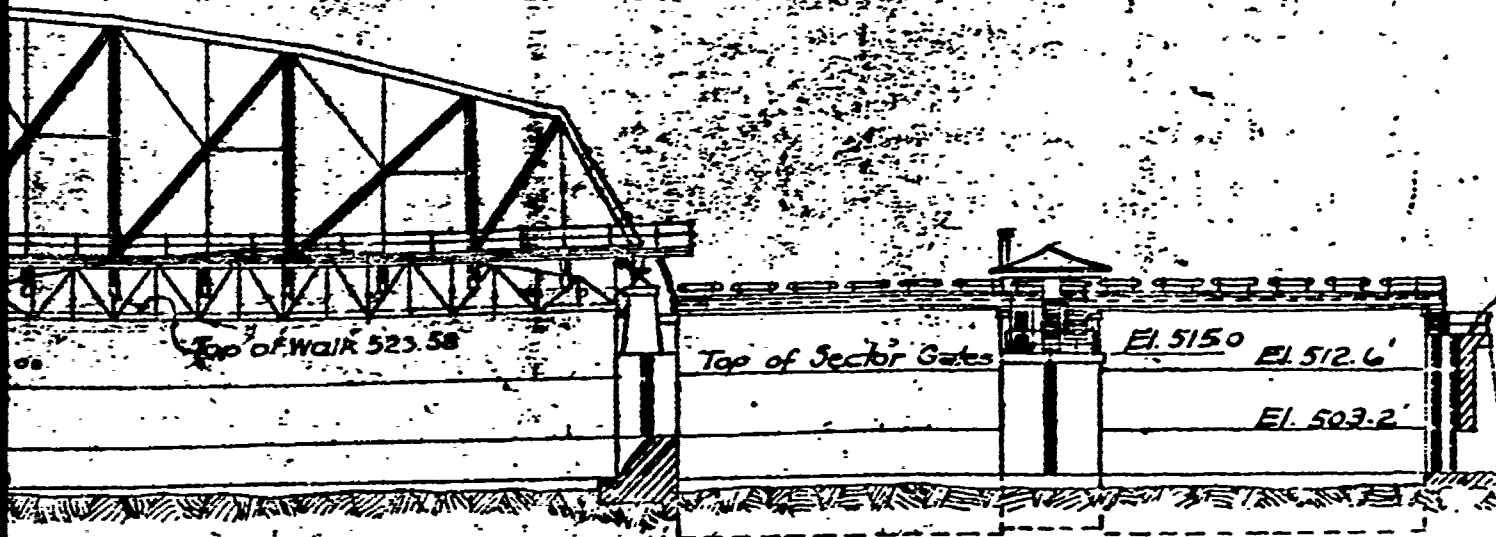
From Drawings Entitled:  
 ROCHESTER GAS AND ELECTRIC  
 PROPOSED LOCATION FOR  
 SECTOR TYPE CONTROL  
 GATES AT COURT STREET  
 BARGE CANAL HARBOR

ELEVATION (LOOKING DOWNSTREAM)  
Scale 1" = 30'

NOTICE	
(E)	DATE
(F)	DATE

7

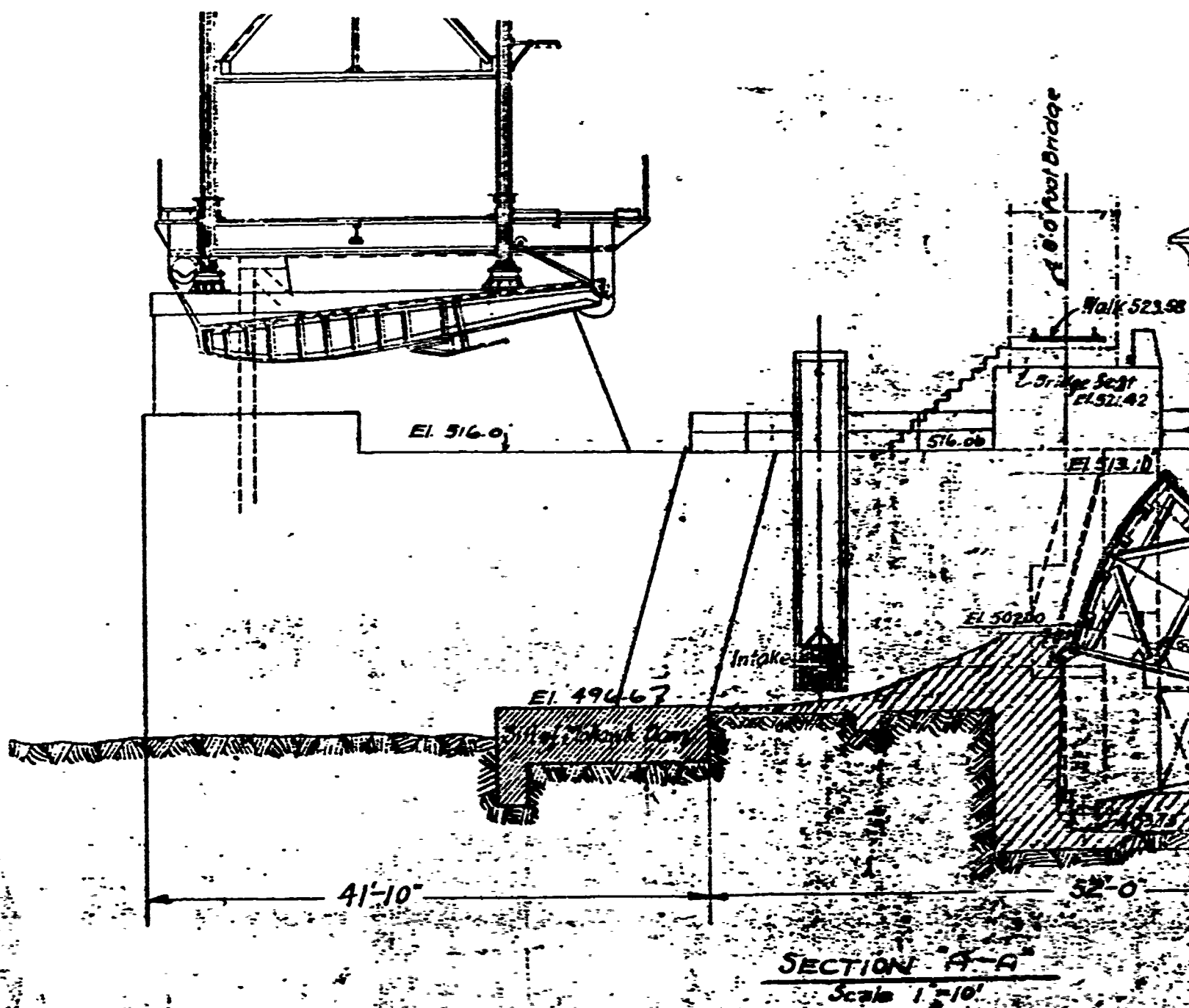




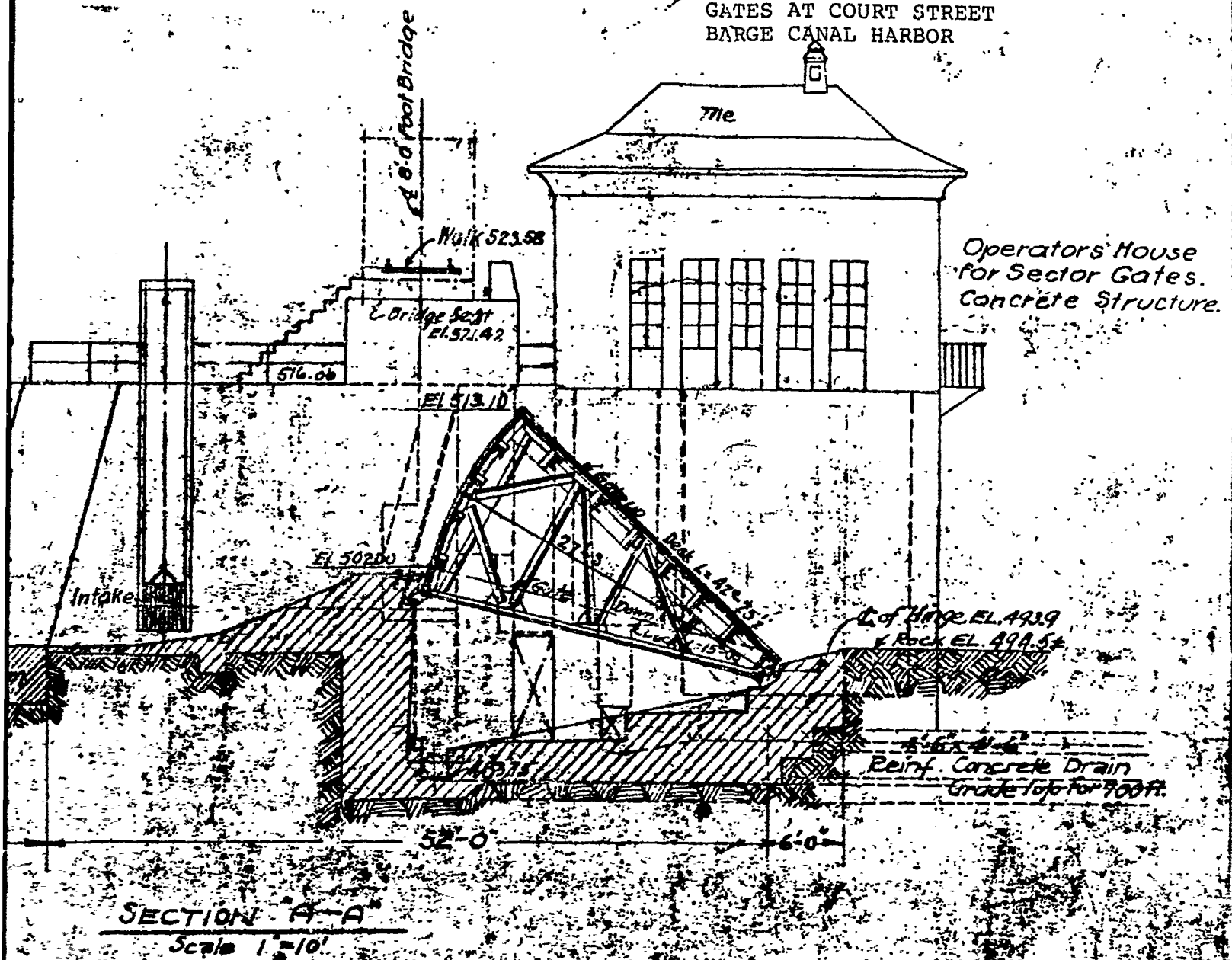
(LOOKING DOWNSTREAM)  
 Scale 1" = 30'

NOTICE REVISIONS—RETURN TO DRAFTING DEPARTMENT ALL PRINTS PRIOR					
E			C Rock Et, Excavation & Foundation Lines corrected at Sec A-A.		A Elevation
	DATE	O. K. M.	DATE 5-3-26	O. K. M.	DATE 8-
F			D Corrected According to Details on Construction Drawings		B Add'l
	DATE	O. K. M.	DATE 12-19-26	O. K. M.	DATE 9

2

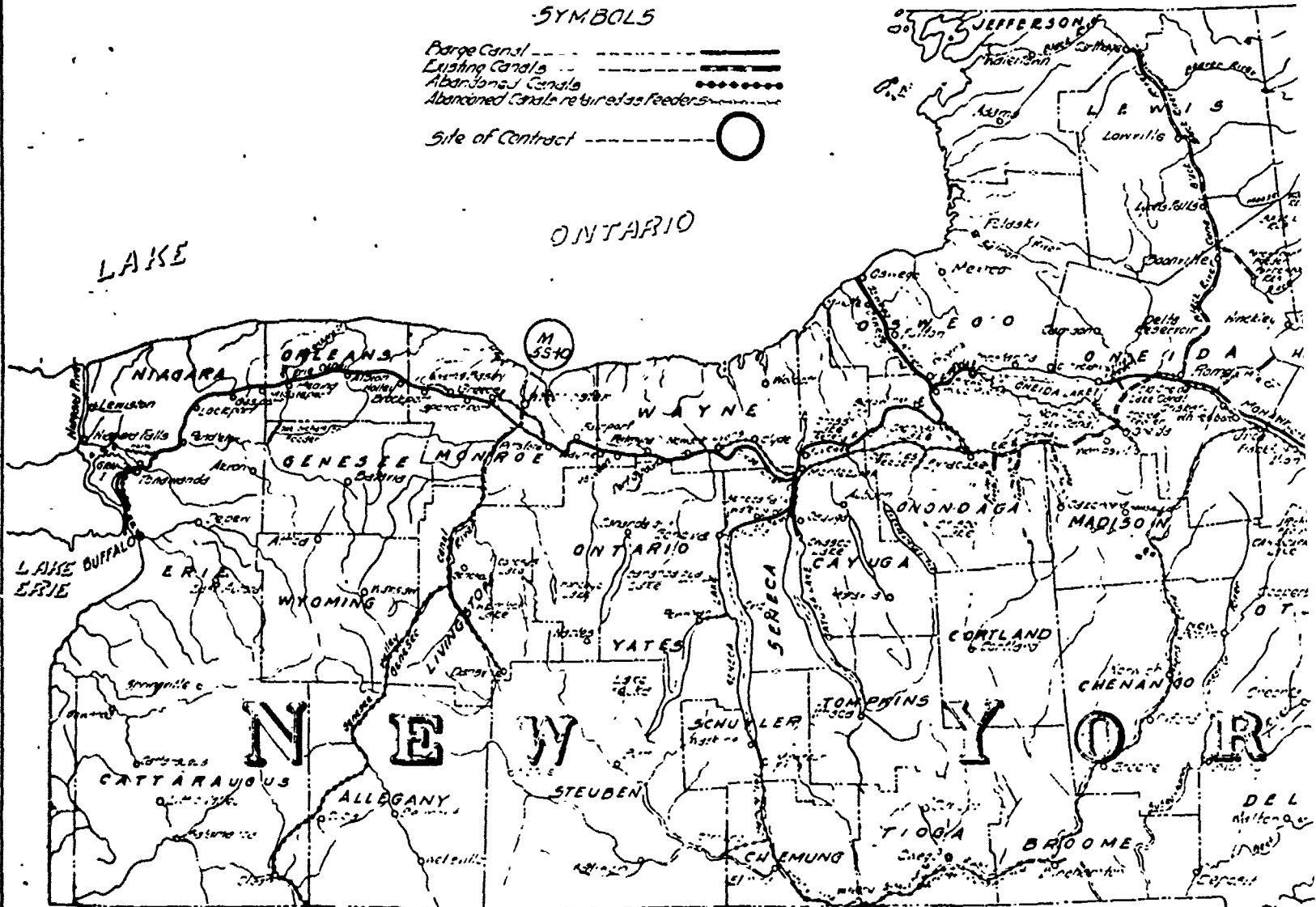


ROCHESTER GAS AND ELECTRIC  
PROPOSED LOCATION FOR  
SECTOR TYPE CONTROL.  
GATES AT COURT STREET  
BARGE CANAL HARBOR



# SYMBOLS

Barge Canal -----  
 Existing Canals -----  
 Abandoned Canals -----  
 Abandoned Canals retained as Feeders -----  
 Site of Contract -----



SCALE OF MILES

Approved.....19

Deputy Chief Engineer  
Department of Public Works

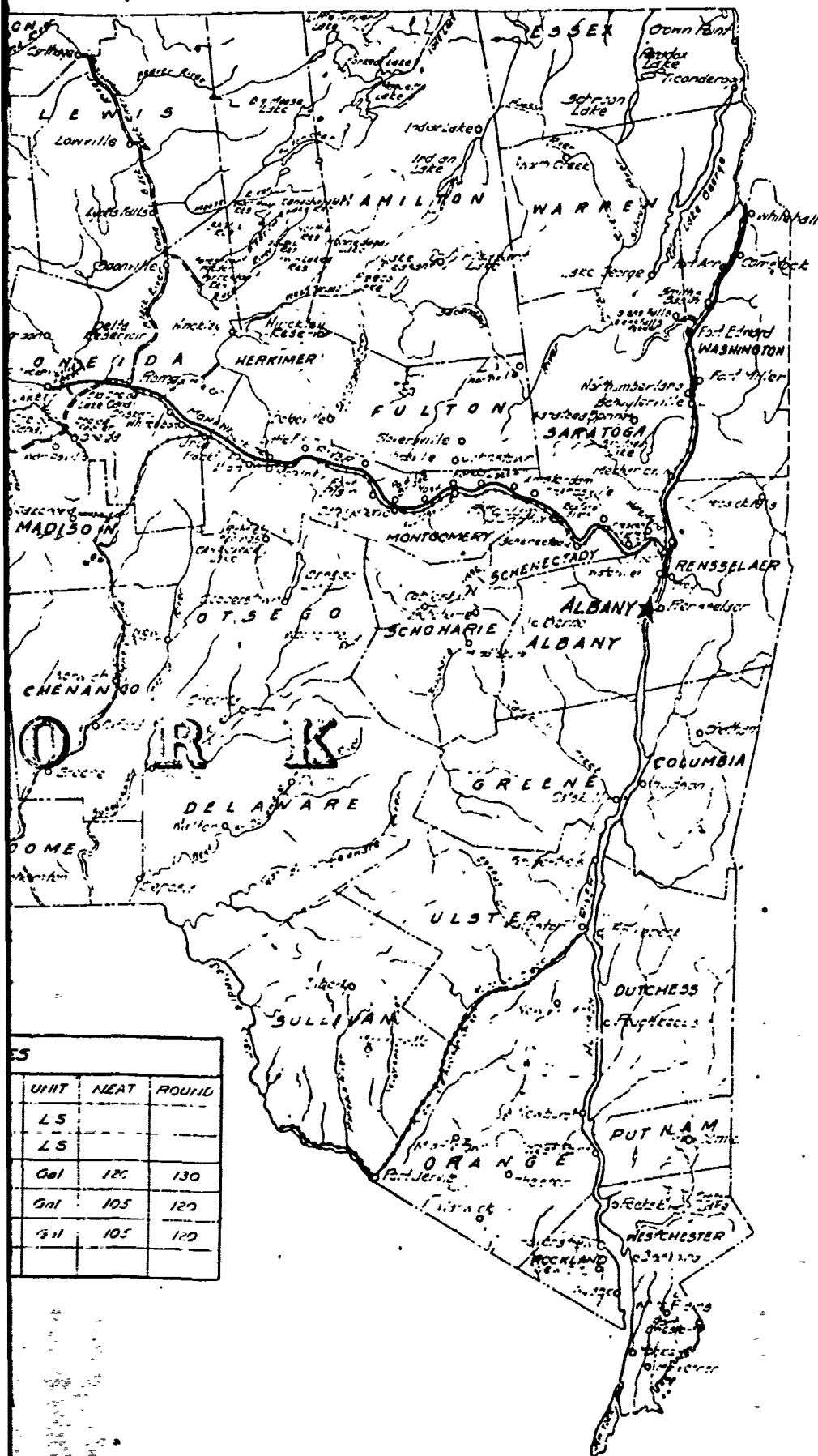
Approved for the State of New York  
Date.....19

Superintendent of Public Works

Prepared pursuant to the Canal Law  
Approved 1959

B. F. Perry, District Engineer, Dist. 19A

ESTIMATE OF QUANTITIES				
NO	ITEM	UNIT	NEAT	ROUND
821	Cofferdams	LS		
210	Sandblasting and Clearing Steel	LS		
211	Furnishing and Applying Red Primer Paint	Gal	125	130
212	Furnishing and Applying 2" Gal. Gray Paint	Gal	105	120
213	Furnishing and Applying 3" Gal. Black Paint	Gal	105	120



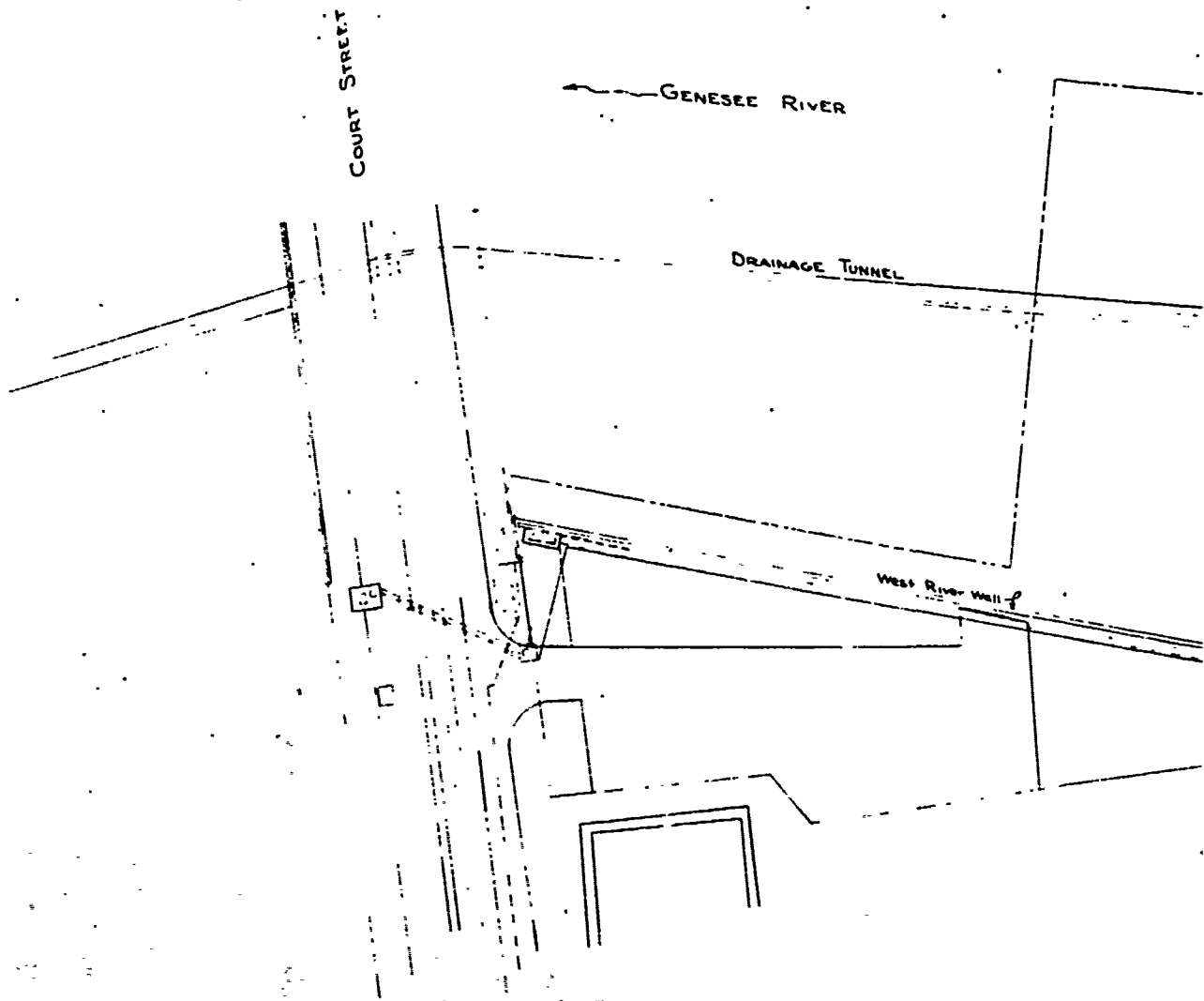
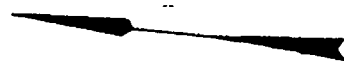
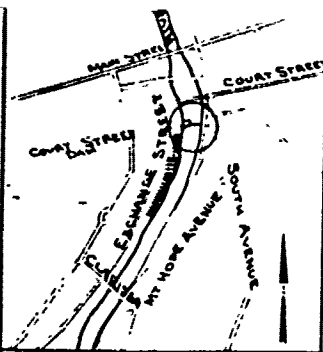
**Datum:**

The elevations shown on this contract are referred to Barge Canal Datum. This datum is based on the Greenbush Bench Mark. The established elevation of the Greenbush Bench Mark referred to Barge Canal Datum is 147.30 feet.

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF CONSTRUCTION  
CHAPTER 542 LAWS OF 1939  
CONTRACT M 58-10  
FOR  
CLEANING AND PAINTING  
SECTOR GATE NO. 3  
COURT STREET DAM  
ROCHESTER, MONROE COUNTY  
NEW YORK

SHEETS 1 TO 3 INC  
SCALES AS INDICATED

UNIT	NEAT	ROUND
LS		
LS		
Gal	120	130
Gal	105	120
Gal	105	120



1

JOHNSON & SEYMOUR RACE

GATE NO 1

GATE NO 2

77'-10"

GATE NO 3

110'-11 1/2"

GENESEE RIVER

SECTOR GATE NO 4

110'-11 1/2"

8'-0"

**BARGE CANAL HARBOR DAM  
COURT STREET ROCHESTER N.Y.**

**CONSTRUCTION**

**LOCATION PLAN  
FOR PAINTING  
SECTOR GATE NO. 3**

SCALE  
1" = 30'

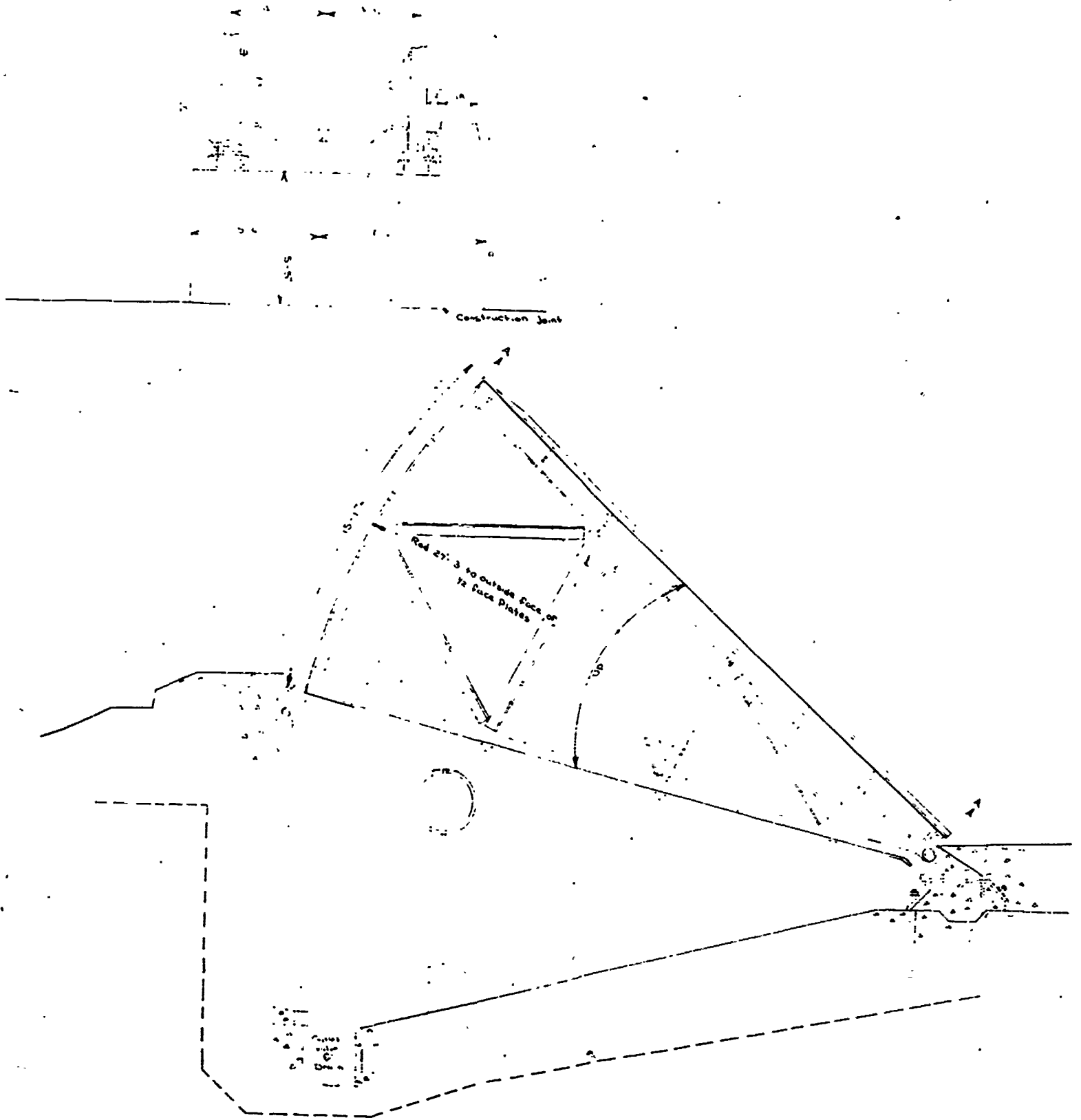
DATE MAY '54

SHEET 1 OF 2  
SHEETS

DRAWN BY  
BARLEY  
TRACED BY  
ERRIGO  
CHECKED BY  
H. J. J.

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF CONSTRUCTION

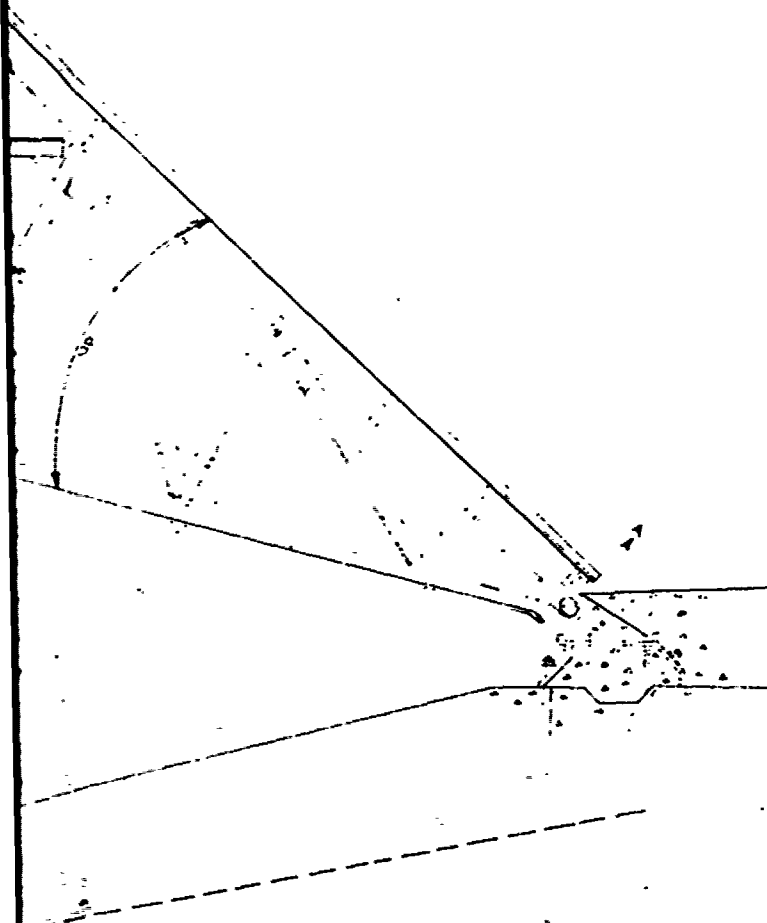
2



Section A-A

7





2

BARGE CANAL HARBOR DAM COURT STREET ROCHESTER N.Y.		
CONSTRUCTION		
DRAWN BY BARLEY	SECTION OF SECTOR GATES NO.3	SCALE 3/8" = 1'
TRACED BY ERRICO		DATE MAY 5
CHECKED BY		SHEET 2 OF SHEETS
STATE OF NEW YORK DEPARTMENT OF PUBLIC WORKS DIVISION OF CONSTRUCTION		
APPROVED	DATE	

Section A-A